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GIFT
AUG 26 1913



Gleanings in Bee Culture



VOL. XLI. AUG. 15, 1913, NO. 16.

Bees by the Pound

**Safe arrival guaranteed to any point
within five days from Medina, Ohio.**

We have finally perfected our pound packages so that we are now able to ship bees without combs to almost any point in the United States and nearby points in Canada without danger of transmitting bee disease of any sort. Half a pound of bees is nearly the equivalent of a two-frame nucleus; one pound, to three frames; two pounds, to six frames; three pounds, to an ordinary colony such as may be sent by express. The express on these pound packages is only about a quarter of the express on the equivalent value of bees when they are sent on combs. We shall be ready to ship bees in pound lots from Medina, with 600 colonies to draw from, by the first of June, at the following prices, without queens: Half-pound package, \$2.00; pound package, \$3.00; two-pound package, \$5.00; three-pound package, \$6.00.

Through July, and on throughout the season, the prices without queens will rule as follows: Half-pound package, \$1.00; pound package, \$1.50; two-pound package, \$2.50; three-pound package, \$3.00.

If you want queens with the pound packages, add the price of the queen selected to the price of the bees.

Express on half a pound of bees with queen, within 300 miles of Medina, will be approximately: One pound, 38 cts.; two pounds, 45 cts.; three pounds, 57 cts.

NOTE.—We can not ship bees by parcel post other than a queen-bee and a dozen or so attendants.

We have so perfected our cages for shipping bees in pound lots that we now feel for the first time that we can guarantee safe arrival at the prices named above, where bees are not on the road more than five days. As a general thing they will go through in good condition, even when out more than six days; but for the present, at least, we do not feel like assuming a greater limit than five days. Our guarantee means that, if bees fail to go through alive, or if they go through in bad order, we will either replace the shipment or send enough more bees to make up for the loss at our own expense, or refund the money. Orders will be filled in rotation after the first of June. Send in your orders now, and thus insure early delivery.

In addition we guarantee to give full measure of bees by weight. Half a pound will contain from 2200 to 2500 bees, and larger packages in proportion.

PRICES OF QUEENS.

Untested.....	July to October, \$1.00.
Select untested.....	July to October, 1.25.
Tested.....	July to October, 2.00.
Select tested.....	July to October, 3.00.

Untested Home-bred Queens in Quantity Lots in August and September.—During August and September we are prepared to name very low prices on large quantities for requeening. Prices depend on supply available, and quoted on application.

Send all orders to the home office of **The A. I. Root Co., Medina, Ohio.** Orders from the extreme South will be filled from Florida and Texas; those in the extreme West, from California.

N. B.—To get the price of a package of bees and a queen, add the price of the queen selected to the price of the package.

Gleanings in Bee Culture

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VOL. XVI.

AUGUST 15, 1913.

NO. 16

Editorial

THE *Western Beekeeper*, edited by Geo. L. Emerson, has, we believe, come to stay. It is certainly representing the Western producer.

THE MAN WHO INTRODUCED THE FENCE SYSTEM.

On page 576 of this issue will be found a breezy article by S. A. Niver. He is the man who introduced to the editor the fence system and sections, as used by his brother-in-law, the late Miles Morton, of York State. There is a sparkle of good humor in Mr. Niver's makeup. We are delighted to know that he is now back to his old love, the bees.

THE EDITOR OF THE AMERICAN BEE JOURNAL ON A TRIP THROUGH EUROPE.

MR. C. P. DADANT, of Dadant & Son, editor of the *American Bee Journal*, is now making a tour through Europe to study European beekeeping and the various races of bees. There is, perhaps, no man in the United States who is better qualified to make this kind of investigation. As the French language is his native tongue, and French is universal throughout all Europe, he will be able to make his way everywhere understandingly. The result of his findings will be given later on in the *American Bee Journal*. There is no man better qualified to bridge American and European beekeeping than Mr. Dadant, and our congratulations are extended to our contemporary.

OUR COVER PICTURE.

TAKING the country as a whole, in the localities where sweet clover grows, we think there has never been such a luxuriant growth as there has been this year. The bloom began early, encouraged by frequent rains, and the bees took advantage of it at once. It is probable that there is no great amount of nectar at any one time in the sweet-clover blossoms; for very often, in spite of the abundant growth, the bees do not get very much surplus. In some localities, on the other hand, it yields quite a crop. The chief value of the plant is in supplying enough nectar to keep up brood-

rearing at a time when there is little else the bees can get.

Our cover picture for this issue shows the luxuriant growth of sweet clover along the bank of Rocky River at our "Waterworks" yard, about three miles east of Medina. When all the States become educated to the value of sweet clover, as a few have done, it will no longer be known anywhere as a noxious weed, and beekeepers will reap some of the benefit.

A POST-GRADUATE COURSE IN BEEKEEPING.

J. E. CRANE says, "Inspecting is as good as a post-graduate course in beekeeping," and Crane is right. We have been helping our State Foul-brood Inspector, carrying him about in a machine from place to place. We have learned something about bees and a good deal more about farmer beekeepers that we did not know before. We have seen some of the queer things that bees will do when the owner neglects them and gives them a ramshackled box in place of a good hive. Incidentally we have learned something about human nature, and more about a combination of beekeeping and farming. Sometimes they do not go well together, and at other times they make a splendid combination, providing the women and children take care of the bees while the "man of the house" is in the field. We have run across some delightful farmer beekeepers—some that are clear up to date. They read every thing that is going on with bees; they have all the honey they can eat, and a good deal to sell.

If some of the old-timers think they know it all, let them go out a day or two with their State Inspector, and see if they do not learn something new about bees.

ENORMOUS DEMAND FOR BEES AND QUEENS.

A LARGE number of complaints have come in concerning various queen-breeders, because they have not been able to make prompt delivery on queens. One customer went so far as to say that he wanted Mr. — (one of the most reliable queen-breeders) "shown up." As nearly as we can

ascertain, all queen-breeders in the country have been behind. Some of them are already oversold, and some have declined to take any more orders. The weather this last spring was unfavorable for rearing early queens. It started out in the Northern States unusually favorable. Queen-rearing was nicely started, then there came on a cold spell, chilling the cells and stopping queen-rearing almost entirely.

Another common complaint is that the queens look small and dark on arrival. It is a well-known fact that, when a queen has been deprived of her opportunity to lay eggs, and is shut up in a little cage, and bumped around in the mail-sacks for one or more days, she will shrink up and look very inferior. If a customer will have patience he will find that such queens will, after they get to laying, improve in size and appearance.

INTRODUCING WITH SMOKE: THE PLAN ADVOCATED BY ARTHUR C. MILLER INDORS-
ED BY OUR APIARISTS.

MR. M. T. PRITCHARD, who has charge of our basswood queen-rearing yard, came into our office one day saying he had tried out Miller's smoke method of introducing, and was very much pleased with it. We said to him, "Mell, suppose you write that up." He did so, and here it is:

The article by Arthur C. Miller, on introducing queens, page 370, I consider the most valuable contribution to GLEANINGS that has appeared for many a month. Since reading it I have tried smoking in queens several times under the most difficult conditions for introducing, and found it worked successfully in every instance.

A very strong colony made up entirely of bees that returned after moving several colonies had twice baffled my attempts at introducing a queen by the cage plan. But a queen smoked in at the entrance on Saturday evening was found to have eggs on three frames on the following Tuesday. Had she been successfully introduced by the cage plan she would hardly have been out of the cage by this time. I have introduced into colonies that had been queenless more than 30 days, and in one instance where there were fertile workers. To be able to introduce a queen at any time under any conditions without having to bother with cages and cage candy is an accomplishment worth knowing how.

Medina, Ohio, July 28.

M. T. PRITCHARD.

Our Mr. Marchant, who has charge of some 500 colonies in six apiaries, learning of Mr. Pritchard's success, began trying the method. He, likewise, was so well pleased with it that we asked him to tell his experience.

I should like to say I have tried a good many ways of introducing queens, but find none to equal this. I have tried this method on colonies that had queens just removed, up to colonies that had laying workers, and in every case it worked to perfection. I am sure we introduce more queens than any one else, and I expect to use this method entirely.

Medina, Ohio.

J. E. MARCHANT.

We have generally recommended the cage method of introducing because it is handy, and beginners are usually successful with it. The veterans will, of course, practice the plan that will give them the best results.

FRAME-TONGS; WHEN THEY MAY BE A NECESSITY.

ON pages 573 and '4 we have illustrated two styles of hive-pliers. Those shown on page 574 are very similar to those sold for many years by T. G. Newman & Son during the 70's and 80's. While it is true, as stated in our footnote, they have never been regarded very favorably by practical honey-producers, there are times when they can be used to great advantage. For example, the foul-brood inspector runs across all kinds of hives and brood-frames. Even if he encounters a modern hive with modern frames, there is a possibility that *that* hive has not been opened for several years. In any case, the inspector has a "job;" and sometimes he feels that nothing short of a crowbar and cold-chisel and a hatchet will make the brood-nest available for inspection. An ordinary pair of fingers will fail to remove any brood frame that has been gummed up in the brood-nest for the past five or six years, and a good steel hive-tool is not "in it." A pair of frame-tongs, as shown in this issue on page 574, would, undoubtedly, be of great assistance in affording a more secure grip on a refractory frame.

Of course, if the combs are built cross-wise, as they often are, nothing but a cold-chisel and a butcher-knife can be used; and even then a sledge-hammer or a crowbar might be more serviceable, not to overlook, of course, the always useful and indispensable bee-smoker.

CONVENTIONS FOR THIS WINTER.

IF the National Beekeepers' Association could arrange dates for conventions, both State and local, it would make it possible for more speakers to attend. For instance, the editor of GLEANINGS would be glad to take in more of the meetings if the dates did not run so close together. In some cases the meetings are on the same day. Sometimes manufacturers are willing to make exhibits at these conventions. If these exhibits could be sent from point to point, one convention after another in rotation, it would save expense, both in the time of the man, railroad fare, and freight. We wish, therefore, to offer the suggestion that the secretaries of the various associations in the United States place all dates before the secretary or president of the National Bee-

keepers' Association. We feel sure that either one would be willing to arrange a scheme of dating that would accommodate every one.

Aside from the convenience of the manufacturers and editors of the various bee-papers, it would make it possible for Dr. E. F. Phillips, of the Bureau of Entomology, to be able to attend many more conventions than he is now able to do. His superiors would doubtless be glad to send him to a number of important meetings if the expense could be divided up between several conventions.

During the past year Dr. Phillips has gathered a great deal of valuable information; and if some of our important State conventions could secure his presence they would thereby materially increase the attendance. Under the present no-system haphazard scheme the editors of the various bee-papers can attend only a limited number of conventions. We respectfully suggest that President Gates, of the National Beekeepers' Association, take this matter under consideration.

Later.—Just as we go to press we have received a letter indorsing the plan. We will publish it in our next issue.

PROBABLE 50-PER-CENT REDUCTION IN THE TARIFF ON HONEY.

SEVERAL have been asking of late what the proposed duty is to be on honey in the new tariff bill now pending in Congress. We wrote to our Senator, Hon. Theodore E. Burton, and below is his reply:

My dear Mr. Root:—This is to acknowledge receipt of your letter of the 23d inst. with reference to the duty on honey. Under the so-called Payne-Aldrich law the duty was twenty cents per gallon. Under the bill now pending in Congress the duty is placed at ten cents per gallon. I think, from present indications, that the bill will go through practically in its present shape, and thus the duty will be reduced, as you say, 50 per cent.

With cordial regards I am

Yours very truly,
T. E. BURTON.

So far we have refrained from any discussion as to the probable effect the fifty-per-cent reduction would have on domestic honey as it would be difficult to make a forecast. We have not felt nor do we now believe that the proposed reduction is going to affect materially the sale of honey in this country. The West India product is all extracted, and much of it of an inferior quality. It is very clear that neither American comb honey nor table extracted would be affected. The only thing that might happen would be a reduction in the price of American honey for manufacturing purposes; but the production in this country, of this grade, is so enormous that we do not

see how it would suffer by way of competition with honey from the West Indies of the same grade. And even if it did, it will have the protection of probably a cent a pound, which, in our opinion, will be sufficient to protect our American producers.

WIRE FENCES FOR PRODUCING FANCY COMB HONEY.

It will be remembered that Mr. S. D. House, of Camillus, N. Y., has been advocating the Betsinger wire fence or separators for the production of comb honey, claiming that he gets better filling, and practically all the honey fancy. We had some supers made up on the Betsinger plan, and turned them over to our neighbor Vernon Burt, of Mallet Creek, about two years ago. Well, he tested them out, but, strangely enough, his bees built the combs against the wire and all through it. The honey was spoiled. The next year the results were not much better. But this year he told us he had some of the prettiest comb honey he ever produced. He showed two supers produced by the Betsinger wire separators, and it was about the prettiest honey we ever saw—all fancy, and every section perfect.

There is a great difference in bees. Some strains will build burr and brace combs in their brood-nests galore, and others will build very few. The former will build their nice comb honey up against the fences. One beekeeper remarked, "The best way to treat such bees as that is to pinch the head of their queen."

Well, it is possibly true that, when Mr. Burt tried out the Betsinger plan the first time, he was using bees that had a fondness for building burr and brace combs. The last time, he used a strain that is free from it, and he has secured beautiful comb honey.

A RETROSPECT; THE EDITOR WHO KNEW IT ALL.

We have been furnishing editorial matter for this journal since 1885—28 long years; and yet we are glad to say that every day we find something new to learn, especially when we rub up against the bees constantly.

Some 25 years ago the editor of one of our bee papers, inclosing an editorial just before he discontinued the publication of his paper, made a statement to the effect that the art of keeping bees had reached its zenith. There was nothing more to learn, no improvements to make; and therefore he was about to discontinue the publication of his paper.

Those of our readers who have taken a bee journal for the last 25 years will probably take issue with the now defunct journal. No wonder it died. Let us see what has happened since that time:

The evolution of the large power honey-extractor; automatic reversing of combs; the steam uncapping-knife; the melting of cappings as fast as they come from the knife, and the separation of the wax automatically; the honey-pump; simplified and improved appliances for the production of comb honey; cut comb honey; bulk or chunk comb honey; the bee-escape; queen-excluders; new and better methods of dealing with the swarming problem; specialist beekeeping—that is, where one man is owner and proprietor of from five hundred to several thousand colonies; syndicated beekeeping, where great corporations in the tropics are producing honey almost by the shipload; the development of new bee territory; migratory beekeeping; shipping bees without combs; bee-disease laws in two-thirds of the States; apicultural stations; government apicultural work; back-lot beekeeping; pure honey in nearly every State in the Union, backed by federal and State pure-food laws, and last, but not least, millions and millions of dollars' worth of honey produced annually where only thousands were produced when that editor who knew it all said we had reached the zenith of honey production.

THE VENTILATED BEE-ESCAPE BOARD.

WE would call attention to an article by Mr. Arthur F. Hodgson, in this issue, page 577, on the subject of ventilated bee-escape boards. While the idea is not new (see GLEANINGS for 1892 and 1893), it is, nevertheless, good. There are two important advantages in the ventilated escape-board. One is the elimination of all possibility of the bees suffocating, and melting down the honey; and the other, having the honey warmed for the extractor as well as free from bees. In regard to the first named, a solid board escape, if it should clog up during hot weather, may kill all the bees above the super; and the intense heat developed by the suffocating bees will melt down the honey. The use of the wire cloth, as shown in this issue, permits free ventilation; and should the escape fail to operate for any reason, no harm would be done, either to the colony or to the bees.

The second reason, warm combs for the extractor, is very important, as every practical extracted-honey producer will recognize. Cold combs in cool weather are very hard to extract clean. In fact, it is almost impossible to get them clean. But combs

that have the heat of the cluster of bees, 98 Fah., will extract very readily.

A great many have objected to the use of bee-escapes on the ground that, after the supers are deserted, the combs are cold; and this would be true of solid board escapes. For that reason many large honey-producers have preferred to brush or shake the combs. If new honey is coming in at the time, shaking will scatter much of it on the ground and on the bees. Nor is this all. The bees crawl all over the ground, get under the trousers, and, of course, the operator is stung more or less. If the honey-flow ceases, there is danger of robbing; and last, but not least important, the bee-escape saves all interruption to the colony. Shaking or brushing stops work, and some little time will elapse before the bees get down to normal again. From every point of view the bee-escape method of freeing the bees from the comb is greatly to be preferred, providing the objections to such methods can be eliminated, and the Hodgson plan, as shown in this issue, does it.

HONEY-CROP CONDITIONS AND PRICES.

THE mass of reports that have been received from the central States shows that it has been unquestionably a good year for the production of clover honey. The peak of the yield seems to have centered down through the Ohio Valley, including Indiana and northward into southern Michigan and southern Ontario. Generally speaking, the yield decreases from that area, either east or west, north or south; but there are exceptions, for even in favored portions of the clover districts there have been almost complete failures; and in regions where the clover yield has been light, there has been an occasional record-breaking crop. In most of the New England States the season has been, perhaps, below the normal. In Eastern New York, Pennsylvania, and New Jersey the yield has been fair to poor. In parts of Illinois there have been good and poor yields. The same is true of Minnesota. In eastern Wisconsin the season has been good, and in the western part poor. Iowa seems to have had a fair yield in most places.

Taking it all in all, the aggregate production of clover will be above normal, for there have been record-breaking yields in favored localities. The price of clover extracted will perhaps be somewhat easier; but on fancy and No. 1 comb the prices ought to be up to normal, for we have never yet seen either too much fancy or No. 1 clover comb honey.

Very little basswood honey has been re-

ported anywhere in the clover belt, or elsewhere for that matter. This means that the clover this year will be all clover.

Our Mr. L. W. Boyden has just been making a trip through the West, looking up the honey situation. His report, in brief, is as follows:

My trip through the West was made in rather of a hurry, as it was necessary that I return here at an early date. At the same time, I visited quite a number of the larger producers in the Middle and Western States, and I am of the opinion that the honey crop will be larger in Colorado, Wyoming, Idaho, and Nevada than it has been for two or three years past.

Nevada and Idaho had heavy rains during July, which is unusual for that territory; but since then the weather has become very hot, thus insuring a heavy honey-flow.

The writer visited a number of very good localities in the West which are not at present being used by beekeepers; and if any one is considering moving westward, and desires information with reference to certain localities, I shall be pleased to give him what little information I have.

There are several new government projects which will be opened in the near future. This will give additional acreage for bees. Many ranches in certain sections are raising seed from alfalfa, alsike, and sweet clover. If one is fortunate in getting near one of these places he will be assured of a continuous honey-flow throughout the summer season.

The Ontario Beekeepers' Association has sent out a very complete report of honey-crop conditions. The average crop is 63 lbs. per colony, largely in the southwestern counties. The eastern counties have practically no honey; but the total yield so far reported is 1,618,000 lbs. from 543 beekeepers out of 700. In the matter of crop reports, our neighbors across the line have it down to a fine science.

The season in Southern California has been poor. In the northern and central portions of the State, conditions have been better. In Northern California there will be about half a crop. In the Mesilla Valley, New Mexico, the year has been a poor one. Taking it all in all, the failure of the crop in California and New Mexico, and in some parts of the Western States, will make Western honey, perhaps, a little scarcer than usual; and this shortage will have a tendency to make prices on Eastern honey more stable. Just what the real effect is going to be, remains to be determined. But certain it is that the Western beekeepers should make an effort to sell west of the Mississippi as far as possible.

There will be danger this year that a large number of beekeepers will dump their honey on the market all at one time. A concerted action would avert this trouble, and the large producers would do well to get in touch with other large producers and associations to avoid a congestion of the market in any one point.

TELEGRAPHIC REPORTS FROM COLORADO.

We have made arrangements with Mr. Frank Rauchfuss, Manager of the Colorado Honey-producers' Association, to furnish crop reports by wire on the 9th and 24th of each month. Mr. Rauchfuss is in the heart of the alfalfa country, and has unusual facilities for getting at the facts. His first report is as follows:

On the eastern slope of this State conditions have improved the past two weeks; flow has been from fair to good in most localities; quality of honey fine; excessive swarming will cut down yield; western slope reports similar crop conditions.

THE COLORADO HONEY-PRODUCERS' ASSOCIATION,
Frank Rauchfuss, Manager.

Denver, Aug. 9.

THE IMPORTANCE OF ACCURACY IN MARKET REPORTS; PRICES FOR THIS YEAR.

ELSEWHERE in this issue we endeavor to give an unbiased and accurate report of crop conditions based on reports of our men in the field, and on letters received from our correspondents and customers all over the United States and Canada. Our facilities for obtaining this information are the best in the country. We have proceeded on the assumption that *exact conditions* must be stated. If, for example, the yield has been heavy in certain localities, that fact should be presented. To hold it back or ignore it with the view of keeping up the market would be a serious mistake. The effect could be only temporary at best. In the end, as soon as the honey began to be dumped in the great centers, the market would begin to tumble, and the momentum thus acquired in the tumble would follow with a crash. It is much better to have the market a little easier, *and hold it at that point*, than to have it take a sudden drop. At present we do not think that prices, except on clover extracted, and possibly on alfalfa extracted, should be below normal; and even these honeys in the liquid form should sell for nearly if not quite what they sold for last year. In view of the partial failure of honey in the South and Southwest, in California and the eastern tier of States clear up into New England, and the fact, too, that clover this year is strictly clover, and not a clover and basswood mixed, should have a tendency to hold prices up. A pure clover will always bring a better price than clover and basswood mixed.

SOME REMARKABLE TESTIMONY SHOWING THE VALUE OF BEES IN FERTILIZING THE BLOSSOMS OF FRUIT-TREES.

In the *Country Gentleman* for May 24 appears an article by William Harper Dean telling of the remarkable success of three

brothers in growing and storing and marketing their fruit. The story is as interesting as the Arabian Nights, and the feats accomplished quite as wonderful; but this story, unlike the Arabian Nights, is true, as it relates *actual* performances. Mr. Dean goes on to recite the early struggles of the father of the three brothers who have built on the splendid foundation he laid; of how this father in his younger days had a vision of growing fruit on a large scale; of the heroic struggle he made; of how he began and failed; lost every cent he had; of how he worked out to make more money, and started again and failed. Most men would have been discouraged and given up the job, feeling that he was a miserable failure; but not so with John Repp. He went at it again.

In the mean time he was raising a family of three boys, and was lucky enough to have a wife who had the same kind of pluck he had. Of course these boys were brought up right; that is, they learned how to work. They profited by their father's early experience, by his repeated failures and occasional successes. The father struggled on; and just as he was on the point of realizing the vision of his early days he died. Had it not been for the indomitable courage that appears to have been bred into the boys, this story as it appears in the *Country Gentleman* would never have been written. But the boys were made of the same stuff as their father. That dearly bought experience that spelled apparent failure for the old gentleman did not come amiss. At all events, the boys are now proprietors of an 800-acre fruit farm, mammoth cold-storage plant, where ten thousand bushels of fruit can be stored and kept till the market is right, and an office where the records and the business of the concern are taken care of.

Albert Repp is the grower who is on the job from sunrise to sunset. Charles Repp is the man who keeps the fruit in that 10,000-barrel storage-plant. Joseph Repp, in Philadelphia, is the merchant who sells the stuff. All three make up what is known as the Repp Brothers, located in Gloucester Co., N. J., and a splendid working team they are.

Well, what has all this to do with bee-keeping? Read the following extracts from the interview Mr. Dean had with Albert Repp, the grower:

I had walked the mile or so from Pitman to seek out this Albert Repp who grows the things for Repp Brothers, and found him returning to his home from overlooking the spraying of certain blocks of trees in the orchards.

"Too windy," he remarked snappily. "We'll stop

spraying until the air steadies a bit. Yep, spraying is no fool's job—it's got to be done right or not at all. We're spraying for peach scab now, and have already been after the codling moth in the apples. Look at the bloom on those pears. Isn't it a dandy?"

It was. I looked through a fairyland of blossoms on correctly pruned trees, in a weedless, grassless, thoroughly worked soil covered with shedding blossoms like confetti after a carnival. It was good for the heart to see such a sight.

MUST HAVE BEES IN AN ORCHARD.

"And if crying would do any good," mused Albert Repp, seeming to forget business for a moment as he, too, gazed at the sight, "I'd cry an hour to bring out the sun so the bees could get to work. It's too cool for them to-day."

"You have an apiary in connection with your farm?" I ventured.

He looked astounded at my question. "Of course! Couldn't do without them. I never take a pound of their honey. All I want them to do is to pollinate the blossoms. I'd as soon think of managing this orchard without a single spray-pump as to be without bees. I've got fifty colonies now, and am building up the apiary each year. There they are—look at them!"

The hives stood in perfect rows, as white as the blossoms above them. But there seemed to be a superabundance of bees, I thought. I mentioned this.

"Not with 450 acres of orchard," he explained. "You see we've got bearing orchards of apples, peaches, and pears, with many varieties of each. Now when you've got a new variety of one of these blooming while others are just budding, it gives the bees and the spray gangs all they can do to keep up with them."

Beekeepers would do well to cut this out and paste it in their honey-houses, or at least put it where they can bring it to the attention of farmers and fruit-growers in their vicinity. Those who have a scheme of outyards should hunt up the fruit-growers, and see if they can not make some arrangement whereby the fruit-growers will ask to have the bees put on their places rather than compel the beekeeper to *pay* for the privilege. For example, at one of our outyards a few behind-the-times grape-growers have made a protest that our bees will damage their grapes. If these fellows could know what these Repp brothers (and we will see that they do) are doing it might change their opinion.

This article is so interesting that we suggest that the readers of this journal hunt up a copy of the *Country Gentleman* for May 24, from which we have made the above extract; and if you can not find one you had better send to the Curtis Publishing Co., Philadelphia, inclosing ten cents for a copy. You had better get it, even if it costs a dollar. It is worth any man's while to read the early struggles of John Repp, and see how when what appeared to be failures spelled the biggest kind of success for the boys who took hold of the plow-handles when the father, possibly worn out, was stricken by death. Such a story should be an inspiration to any young man, especially if he has met with some reverses.

Stray Straws

DR. C. C. MILLER, Marengo, Ill.

BEET sugar has its certificate of character, p. 398, but I'd feel surer about it if the *British Bee Journal* would endorse that certificate.

P. C. CHADWICK, your head's level on the sugar question, p. 404. I suspect there's many a beekeeper thinks he's making money by feeding sugar when he's losing.

HONEY-PLANTS luxuriant this year. Plenty of white-clover blossoms an inch in diameter, with stems more than a foot long, and one dandelion stem I measured was 30½ inches long.

LET me endorse the use of dummies recommended by G. M. Doolittle, p. 442. I have some just such as he describes. Others, instead of being an inch thick, are ¾ thick. These I like better, although it requires a few more of them. They are easier to handle if an inch shorter than the frames, and seem to work just as well.

MR. EDITOR, likely enough you are right, p. 481, that in grading section honey more than two different weights are needed. For the sake of illustration, let us suppose that the three weights needed are 12, 13, and 14 ounces. My idea is that there must be three different scales—not one pair of scales capable of weighing all three weights, but three separate scales, one weighing 12 ounces and nothing else; another 13 ounces, and another 14 ounces. The simplest possible arrangement will answer—just a bar with a weight on one end and something to lay a section on at the other end. You see it would take too much time to have scales that would have to be changed every time a different weight was needed. And surely a balance weighing only one single weight could be made for less than one weighing different weights. [Having three scales would be more expensive and more complicated than having one pair of scales that would instantly record 12, 13, 14 ounces, or any other weight at a mere glance. We do not believe there are any scales on the market such as you have in mind; and the demand for them would be so limited that the cost would be prohibitive. The only thing to do is to take what is already on the market and make the best of it.—Ed.]

MR. EDITOR, let's see if we can not come to terms about that winter-nest business. You ask, p. 482, that I shall not confuse outdoor and indoor wintering. I recognize that outdoor wintering is under discussion, and not only outdoor but Canada outdoor; for if you go far enough south, where is the difference between outdoor and my cellar?

All the same, if a cluster of bees in cellar can hang below bottom-bars, what reason is there that they can't do the same outdoors? You are entirely right in thinking that solid slabs of honey allowing layers of bees only ¼ inch thick will not do. Even in cellar I should expect ¼-inch layers to perish. But a 2-inch layer is another story. With a 2-inch space under the bottom-bars (a deeper space might be better), allowing the bees to cluster clear down to the bottom-board, there ought to be no trouble about their keeping one another warm. I wonder if you've thought of this: Solid slabs, allowing ¼-inch layers of bees *only*, are bad; empty combs are bad after the same kind, but much less in degree; the ideal is a solid cluster of bees with nothing interposing, directly under a solid mass of honey. And this refers to the severest climate outdoors. [When we speak of outdoor wintering it would, perhaps, be well to bear in mind that it means all degrees of temperature—high winds, no wind, wet snow, and light snow. We do not believe it would be practicable for a cluster to winter under the frames for outdoor wintering. Even a winter with a temperature of only 50 degrees would drive the bees up between the frames. And when it got down to zero or even below, a cluster in front of the entrance on a level with the bottom-board would freeze to death. On the other hand, in a cellar temperature anywhere from 40 to 60 degrees, at either extreme a cluster could be maintained below the frames. A winter nest for cellar wintering is not important; but we believe it is vital in outdoor wintering. We should expect, in our locality at least, that a cluster of bees would not stay in the space between the bottom-bars and bottom-boards in outdoor wintering, but would move up three or four inches on the combs. As the winter progresses, the winter nest would move upward with the bees; then move backward to the back end of the hive. That is precisely what takes place in our outdoor-wintered colonies. The writer has opened up hundreds of colonies at all times during mid-winter; but we have never yet found a cluster below the frames. We should like to know if there was ever a case recorded of that kind.]

In early fall it may be practicable to give a colony nothing but solid combs; but let that colony have its own sweet will and it will soon make up a winter nest just over the entrance and about two inches above it, in our locality. This would be during November and December.—Ed.]

SIFTINGS

J. E. CRANE, Middlebury, Vt.

The honey crop in this section will be light, owing to severe drouth. I hope it may be better in other parts of the State.

* * *

This year I have used one-piece sections for the first time. Their only fault so far has been that most of those filled with honey appear to be a little diamond-shaped, or not quite square.

* * *

"Once you have foul brood you always have it," says E. D. Townsend in the *Review*. Yes and no. If you are a shiftless, thriftless beekeeper, yes; and if you are a worker and pusher, and you have a fairly good foul-brood law, I say no.

* * *

Mr. Chadwick, of California, on p. 250, April 15, refers to the ignorance of beekeepers. Inspecting is as good as a post-graduate course in beekeeping, and I think it is better. The inspector will learn a great many things not found in the books or journals.

* * *

In Mr. E. S. Miles' article on feeding back extracted honey for finishing sections, p. 415, June 15, he says that in two or three weeks' time between clover and heartsease he usually gets from 15 to 25 supers finished per colony. This would be more than a super a day. Is not there some mistake about this?

* * *

Dr. Miller, you say, p. 418, June 15, that if you find a colony needing treatment, if you wish to prevent swarming you remove the queen and kill all the queen-cells, and again in ten days kill all queen-cells and introduce a laying queen. Now, don't you sometimes get a young queen hatched in ten days that will make you trouble?

* * *

It is undoubtedly true, as Mr. Doolittle says, p. 405, June 15, that in an exceptionally good flow of honey there would be a waste of wax where foundation is furnished so as to fill sections with it, with the result that the foundation would not all be drawn out. But in practice I find such occasions very rare, while the necessity for full sheets of foundation in the sections in order to get them well filled with combs and honey is a constant factor in the successful production of comb honey.

* * *

Mr. Byer refers on p. 412 to the pussy willow as credited with not yielding honey.

In this locality at least, this is not true, as it produces its seed on its pistillate plants, which produce no pollen, and must be visited by bees after having visited staminate flowers in order to carry the pollen. Honey would be necessary to attract the bees to these flowers. Mr. Doolittle may have noticed bees working on the staminate flowers, and have drawn his conclusions from the fact that the bees got no honey from them, and failed to notice them when at work on the pistillate flowers.

* * *

IS ALFALFA POLLINATED BY BEES?

"Is alfalfa pollinated by bees?" is asked on p. 267, April 15, with facts given in answer to the question. A year ago, while in Washington, I became very much interested in the experimental work of the Department of Agriculture in the introduction and also the production of new varieties by hybridization of colonies. The superintendent, whom I looked up, said that I might make some inquiries, gave me to understand that honeybees are of little or no value in the fertilization of alfalfa, as they are unable to "trip" the flowers. He showed me a large number of hybrids, one of which is likely to prove of great value to the farmers of the country. He told me of varieties that are likely to prove hardy even in the climate of North Dakota.

* * *

I found a beekeeper two years ago among whose bees there was some disease; but it was too late to treat them. I went again last spring, and with him opened every hive and showed him all about how to treat the disease. Again, this spring, I tried to find him to look over the yard; but when he found I wanted him he slipped away. His yard was one of the most slipshod I ever saw, and I could not blame him. Well, nearly half of his hives contained disease.

I went to visit another beekeeper who had a badly diseased yard two years ago. He met me, his face beaming like the rising sun. "I want you to come out to see my yard of bees," said he. "I have got the prettiest yard of bees in the county," and I want you to look at it." The hives were all painted, and every thing was neat and trim.

"Got any foul brood yet?" I inquired. "No," said he; "I have gotten rid of all of it."

Of course he had. It doesn't stay with such beekeepers.

Beekeeping in California

P. C. CHADWICK, Redlands, Cal.

Some feeding has already begun in a small way, but will not open up in earnest for a few weeks.

* * *

Pickled (or sac) brood seems to have had quite an inning this season. Many reports have reached me of the prevalence of this disease over most of the southern part of the State.

* * *

I have lost several letters containing stamps for reply, among which was one from a gentleman in Nebraska, another from a lady in Washington or Oregon, and another from a lady in Banning, Cal. These parties will do me a favor by writing again, and I will try to give them the desired information.

* * *

July 26, fog and cold is the program at this writing, with some rain in the foot hills and mountain regions. I have never seen a season before with so much fog and cloudy weather in midsummer. To-day the temperature has been 69 at the highest and 59 at the lowest. Last week we had a rain, and for the past two weeks we have had regular winter weather while we were reading daily of the heat prostrations in the East. I believe that, if the season had been moist enough to produce a honey crop, there would have been some *beekeepers* prostrated because of the time that would have been lost by the bees on account of the cold cloudy summer.

* * *

I have had more trouble this season introducing queens than at any former time within my memory. Last year I removed the old queen and placed the introducing-cage with the new queen in the hive at one operation, letting the bees release her at will, and I did not lose a queen. But this season I found that the only safe plan has been to make the colony queenless until the cells are well advanced, then to cut off the cells and give to the colony the cage containing the new queen, to be released by the bees. I am completely at sea as to the reason for the failure of the first plan, conditions being almost identical with the conditions of last year at introducing time. Some queer things happen at times in this line. Last spring, while working at the apiary with Mr. Byron Crawford, my helper, in some way we lost a queen out of one of the many hives we had handled. There was a question as to what to do with her. Crawford wanted to roll her in honey and put

her in a fertile-worker colony, so I consented, and he did so, with the result that she was cleaned up and went to work.

* * *

In reading the reports of crop conditions in the July 15th issue I notice that in some places the honey crop was cut short by two or three weeks of dry weather in the white-clover belt, and I know full well what that means to the eastern beekeeper from past experience of my own. In this part of California, if we have had a heavy rainfall through the winter and up to the middle of April we pay no attention to two or three weeks or that many months of dry weather. The last rain we had in 1905 came the first of May, yet every thing yielded in its season. We extracted 30 cases from 110 colonies September 12. They filled full again before winter; and the way they came out the next spring with hives full of bees was pleasing indeed. Give us plenty of rain in the winter and we would, but for the cold foggy weather when the honey-flow is on, be ready to join the "Don't Worry Club" for a while.

* * *

Recently I made a trip into the edge of the mountains to visit a friend. During my stay I discovered a new-style "let-alone hive." It was, as I remember, a soap-box into which the bees had been dumped with some thin boards covered over the top, on which was a rock of some size. The entrance was two auger-holes, but most of the bees were going in and out under the cover boards. I concluded to make an examination, so I approached the hive as I would one in my own yard. I had reached a point about six feet from the hive when I decided to make a hasty retreat. I turned my head in time to get my eyes out of the way, but the back of my head was about as full of bees as my hair would hold. I let them alone, and have been wishing ever since that I had them where I could spend about fifteen minutes every day smoking them. There is no question in my mind but that bees get used to having people around. I have hives within 15 feet of my back door-steps, around which my children play day after day, and they rarely get stung. If I bring in a colony from the apiary at any time, it is always necessary to caution the family to go easy around them until they get used to seeing us pass to and fro. This hive I have just spoken of was in a remote place on the farm, and the only thing in the bee line to be found.

Beekeeping in the Southwest

LOUIS SCHOLL, New Braunfels, Texas.

A "FIGHT" FOR NET-WEIGHT PACKAGES.

Much honey is being sent to market just now in receptacles that do not hold the stipulated weight as given on the shipping-tags and as indicated on the invoices sent by the producer to the buyer. I question whether this is right in the first place, and whether it is a safe plan to follow. It must be only a matter of time when the law governing the proper weight of the contents of a package will be looked after by the pure-food authorities, and it seems to me that it would be better if beekeepers would remedy this matter before any trouble comes.

One element of unfairness is that some of the larger producers are required to put up their honey in net-weight packages, while others do not do so. The extra weight over the short weights of many of the smaller producers is a big item to us who ship from 70,000 to 100,000 pounds. While it is easy enough to find buyers for a small lot of honey here and there to take care of quite a number of these short-weight lots, yet it is a much greater item to dispose of big amounts of honey direct to a few large buyers who maintain that they must require full-weight packages.

I am aware of the fact that a few shippers do oppose our "fight," as they term it, for net-weight packages. We have been assured by several of them that they agree with us that we are right in our efforts, and that they will immediately step in line when the change to net-weight packages is obtained. In a joking way it was asserted that I was bringing a great hardship on the numerous beekeepers who were making a practice of shipping short-weight packages year after year. But to be fair in the matter, the only remedy would be to settle upon a full net-weight package all around. And it is to be hoped that this trouble will be remedied once for all time when our next year's honey-shipping season opens. Let's have a fair and square deal all around.

* * *

BEEKEEPERS, GET TOGETHER MORE!

Never before has there been the necessity of beekeepers getting closer together for the discussion of their welfare, crop results, and marketing, than this year. There seems to be very little effort on the part of the great number of beekeepers to strive to ascertain the crop conditions and the price at which honey should be sold, early in the season, so that the crop may not be sold too low. There is no reason at all, in my mind, why the Texas honey crop should not have brought at least half a cent per pound more

than it has brought. The entire Texas crop is a short one, and the demand has been most excellent. Besides this, the quality of the honey was better, as a rule, than last year. All in all, it should have brought a little better price than last year, because it was worth more, and the demand for it at the higher price was there. I know this from the simple fact that I could have sold any quantity of honey at the higher price if I had had it, and that, too, in spite of the lower prices that were maintained by others who market a great deal of honey.

The unfairness of selling lower than the price that ought to reign is very annoying to the beekeeper who is striving to maintain good prices, when some of his customers complain that his price is half a cent or a cent higher than the price at which somebody else is now offering his honey. Especially is this annoying when such a customer has already placed his orders for the year, and more so if this customer has been one of long standing, buying a great deal of honey year after year. In a few instances I have been required to cancel the orders, as I have made it a rule not to come down with the price that I found, through careful study and investigation, was the fair and proper one to be maintained.

Of course, it is hard to give up an old customer, and it is brought about only by the beekeeper who not only fails to recognize the price that ought to be maintained, but who is only too ready to plunk his crop on the market at a lower price in order to get rid of it. The jobber and the retailer get the benefit of this lower price, we have found, in that the retail price is about the same whether the beekeepers get half a cent more or that much less than the general market price. The loss to the beekeepers of Texas, on the other hand, is enormous. Half a cent per pound added to the price of all the honey that is sold throughout a single honey season amounts to a great deal. And this loss is occasioned by no other reason than the lower level set by the careless and the ignorant beekeeper.

Therefore it is high time that the beekeepers should get together and discuss these matters. It is not actually necessary to organize the beekeepers into a selling organization at the start, but frequent meetings, or even visits, among the beekeepers of every beekeeping center, for the discussion of crop conditions, and the prices that ought to be maintained, in accordance with the prevailing crop conditions and the market, would help a great deal.

Conversations with Doolittle

At Borodino, New York.

QUESTIONS ANSWERED.

A correspondent writes, "Did you read on page 503, GLEANINGS for July 15, that the first queen-cell is 'likely to hatch on the ninth day from the time the prime swarm issues'? Is that correct? From my observation I find that, as a rule, the prime swarm issues with the sealing of the first cell, and also that, as a rule, all queens emerge from their cells in from seven to seven and one-half days after the cells are sealed over. Also that, when every thing is favorable, the second swarm, or first after-swarm, issues on the ninth day after the first or prime swarm. What has been your experience?"

If I am correct, it was Moses Quinby who gave the rule that three days after the egg is laid in the queen-cell this egg hatches into a minute larva. It is fed by the nurse bees for six days, when the cell is sealed over. Seven days after the sealing of the cell the queen emerges; and two days later, when every thing is favorable, and an after-swarm is desired by the bees, the first of the after-swarms issues. That is to say, where the prime swarm issues with the capping of the first queen-cell the first of the after-swarms will issue nine days later. In the development of brood, and in all of this swarming matter, cool, rainy, bad weather, retards; and hot pleasant weather, with a good nectar yield, accelerates. But the data given will be found accurate enough for all practical purposes. And my forty-five years of experience has corroborated and proved that Quinby was correct. Of course, in my later years of work with the bees very few colonies have been allowed to have their own way in this matter of swarming; but the few that have thus been allowed have proven that bees swarm very much in this twentieth century, as they did half a century ago, when Quinby was conducting his experiments and observations.

QUESTION NO. 2.

"A swarm came out one day, clustered, and was hived. In the afternoon the bees came out in a straggling swarm and went back to the parent hive, leaving a bunch of bees about as large as a teacup. These remained a day or two, when they swarmed out and clustered. I found the queen with them. Why did most of the bees leave their queen and go back?"

The above is one of those perplexing occurrences which occasionally take place in a large apiary where natural swarming is allowed. The general cause is, that a few

strange bees attach themselves, cluster with the swarm, or go in with the swarm when the bees are being put in the new hive. And because of the presence of the strange bees, the bees of the swarm, or a small portion of them, ball the queen either for safe keeping or for some other purpose. When the queen of the newly hived swarm is thus balled, the bees seem to think that they have lost their queen; and after vain attempts to find her in or about the hive they begin returning to the parent hive, going a few at a time. It sometimes takes the larger part of an hour for all the dissatisfied ones to return. But there are always left from half a pint to a quart of those in the ball, and those near enough to realize that their queen is there which do not return. At about this stage of the proceedings, good common sense seems to take possession of those which remain, and the queen is allowed her liberty, when, if nectar is coming in, they go on and do the best they can at making a colony; or if a bad spell of weather follows, and they are likely to starve, they will swarm out. If, after they begin to return, they are stopped from going home, they will try to go into other hives.

In this way I used to find that a large proportion of them were killed. Finally I learned how to keep them in the hive where I had put them. When I found a newly hived swarm in agitation about the entrance, with a few bees returning to the parent hive, I would open the hive containing the swarm, and, finding the ball of bees, smoke them till they released the queen. She was then placed in a long wire-cloth cage which would reach clear across the frames. After closing the hive, an old bag or cloth of some kind was thrown over the top of the cage and frames as a temporary affair. A hum of contentment was always the result. As the bees had access to the queen between every frame-range they all settled down to quiet and work, the same as if the queen had never been balled. The next morning I would release the queen, remove the cage, put on the supers, and all would go well. At first, when hunting the queen I would put her into a common small cage and hang this cage by means of a wire down in the center of the hive, where no combs or frames of full foundation were used; but in about half the time this would not satisfy the bees. They would show their dislike by balling the cage so that the desired results would not be attained.

General Correspondence

IMPRESSIONS AFTER ONE YEAR'S EXPERIENCE IN BEEKEEPING

BY ANDREW J. MONTGOMERY

Through no plan or preference of my own I became a beekeeper in a small way. Some months before, inflammatory rheumatism had sent me to the hospital. There the "hot air" treatment was successfully given; and when I returned the rheumatism was gone, for the time being at least. That fall two men in my congregation (I am the pastor of a suburban church) made me a present of a colony of bees. Antecedently I had no more use for bees than for rattlesnakes, and would have given both the equal courtesy of keeping at a safe distance. But with a hive located on one's own back lot he is confronted with a condition, not a theory. Fortunately, winter was at hand, and that gave time to make the necessary mental readjustments. Several times during the early winter I observed the bees taking a flight, but it was done in the same manner Moses saw the land of promise—afar off. When spring came, one of the donors opened the hive and initiated me into the mysteries of caring for the colony of bees. The first year was successful. I have three colonies now, and secured 72 sections of honey. That is good enough for a beginner.

The first year taught a good many lessons. Some of these, no doubt, will be modified to a greater or less extent with more real experience. But there is a vividness about first impressions which rarely ceases. It is said that, if a man gets printer's ink well rubbed into his hands, he is never able to wash it off. Is not the same true of beekeeping? Can propolis ever be removed from the hands, especially if one has been inoculated, in a generous fashion, with the virus of bee-stings? There is a quality of fatalism about the business. Whoever would not be a beekeeper had better never allow himself any experiments with the art. The disease of melissitis (peace to the shade of Noah Webster) is in most cases incurable.

For the ordinary professional man the care of bees ought not to be despised as a form of health insurance. The mental relaxation, the employment of a different set of brain cells, and the attempt to solve the hundred and one different and also difficult problems which arise during the brood and honey season are a perfect God-send to the man the greater part of whose working hours is spent in the office. I have some

friends who are physicians who sniff when the sting cure for rheumatism is mentioned. May be they are right. But since I have been stung generously by the bees there has been no recurrence of the dreaded rheumatism. I notice that many of my beekeeping friends are in the habit of saying that a nervous person ought not to go near bees, nor should such a person ever try to take care of them. It occurs to me that the nervous man is the very person who should learn to handle bees. He is most likely to learn his lost art of deliberateness, which is the secret, very largely, of self-control.

The mode of life of a colony of bees is a first-hand experiment in socialism. They have the social sense developed to the last degree. They have the community sense in an exaggerated form, so that the self sense is altogether lost. Therefore I was intensely interested last fall in watching the outworking of some of their socialistic principles. First, I saw young husky workers drag out bees that had grown gray in the service, figuratively; summarily eject them from the community, and leave them to their fate, which was death. Then I noticed the fate of the drones. A small worker like a little tug-boat would appear on the landing-board, hitched to the wing of a big drone, and headed out. Well, that is not the spirit of Tennyson's "Crossing the Bar." The bees have relentlessly followed socialism to its logical outcome; and that is, the destruction of the non-producers. After my first summer's experience with the bees I am less inclined toward socialistic measures than ever before. If our chief aim in life is to produce producers only, then the elimination of the non-producer is, of course, required. That may be the implication of theoretical socialism, but it is not the spirit of Christianity.

The perennial freshness of the interest in the keeping of bees is, I fancy, largely due to life and mystery. A hive bursting out with bees is a sight to gladden the heart of any one. There is life abounding, exuberant. The ancient Egyptians used the bee as a hieroglyphic sign to indicate royalty.

As the Egyptians used their bees
To express their ancient Ptolomies.

—Hudibras.

Incidentally, no doubt this is the origin of that odd expression, the "king bee." The bee was the royal symbol, we are told, because the king had honey to give as a reward, and a sting as punishment to the unworthy. But it seems to me that the real reason why this insect was chosen as the

royal emblem is that it is a symbol of life. The glory of a king is the swarming multitudes over which he reigns. And the populousness of the hive must have suggested itself as a fitting emblem of the king, the head of their national life.

Then add the fascination of mystery to the interest which we all have in life in its varied forms. After all the light which we possess is gathered together, the mystery of the things which we do not yet know about bees is very great. There are many things about the habits and life-history of the bee for which light is sought. And the problems of bee culture are elusive, because, as it seems to a beginner, there are so many things which are known only in a practical way and not scientifically. For example, Albin Platz says, page 23, Jan. 1, "Don't practice stimulative feeding in the spring." My single colony came through the winter weak. I am satisfied I should have received little or no surplus honey without stimulative feeding. I used the Opfer feeder, which will take only five ounces of sweetened water at a time. Almost immediately the reaction under this stimulus was visible. The queen got busy. With the number of sections of comb honey already indicated, with one nucleus taken off and a brood-frame taken out to strengthen another weak nucleus, I feel that stimulative feeding is a good thing. But this is simply matching experience against experience. If the Department of Agriculture would permanently maintain a great experimental apiary, and employ the laboratory methods of modern science, light might be gained on some of the really great problems of bee culture. I do not now refer, of course, to stimulative feeding, which is not so vital as many other problems.

Oak Park. Ill.

LECTURES ON BEES IN BAVARIA

BY J. A. HEBERLE

The organization of beekeepers of Markt Oberdorf and the surrounding country arranged for a short course of instruction in beekeeping free, not only to the members of the organization, but outsiders also were invited. Mr. C. Hofmann, Munich, in charge of apiculture in Bavaria, conducted the course. Being so late in the season, practical work in the apiary had to be omitted. First was given a talk on the history of beekeeping in general, and especially in Bavaria.

IMPORTANCE OF BEEKEEPING.

The value of colonies, wax, and honey, based on the number of colonies in 1907,

was estimated at two and a half million of dollars—quite a sum for so small a country. For this reason the government encourages and fosters beekeeping in every way. The service bees render to agriculture by fertilizing the flora is great. Some one has ventured to estimate the value per colony at \$20.00. He thought, probably, he would rather lose the game by playing a card too many, as Sancho Panza said. The flowers secrete nectar so the bees and other insects will visit them and bring and carry away the needed pollen. The nectar is usually within, at the base of the flower; and while the bee or other insect endeavors to get to the sweet, the pollen sticks to the hairy garment of the bee; and when she touches the pistil of the flower a few of the fine grains of pollen do the work. The "Wiesen Salbei," a salvia, has a peculiar construction. In order to get to the nectar the bee has to push the short end of a lever. On the long end is the stamen. The bee pushes the button and does the rest. We see how wise it is that the bee, while gathering nectar or pollen, visits but one variety of flower or blossoms, otherwise the probability of bringing the needed pollen to the right place would be greatly lessened.

BEES IN HOT-HOUSES TO POLLENIZE APRICOT BLOSSOMS.

The lecturer mentioned a very interesting case. The city of Nuernberg has a number of hot-houses in which apricots are raised. These hot-houses are rented to a gardener. This gardener, with his assistants, used to fertilize the blossoms with brushes, but they had only moderate success. Once, through a broken pane of glass, some bees got into one of the hot-houses. It was found that in this house where the bees had fertilized the blossoms the trees had set much more fruit than the trees that were artificially fertilized. After that, bees were kept in the hot-houses during blossoming time. The bees do the job cheaper and much better—in fact, too well, as too much fruit sets. It was further found that the time of blossoming was much shortened. This is a decided advantage, because the weather and the various enemies have less chance to do damage. It is known that, after the fertilization is complete, flowers and blossoms soon cease to secrete nectar, and insects are no longer needed. The plant makes use of the sap (its blood) for the ultimate purpose—the production of seed, etc.

ANATOMY.

The *chitin skelet*, as well as the interior organs, were thoroughly discussed. Drawings on the black-board, charts, and a model, helped to elucidate the subject. The

anatomy and physiology of the bee is very interesting and complicated. The antennæ alone have many thousands of organs of sense. The tongue is part of a complicated suction apparatus. The legs show a marvelous adaptability for walking on the ceiling or on glass. They can hold a great weight, as is shown when bees collect pollen in the basket to carry it home to the babies. The stinging apparatus is wonderfully made. The novice will readily conceive that it is fearfully made.

VARIOUS RACES COMPARED.

Of the many varieties of bees, the Italian, Carniolan, and the common black bee were mentioned, and the character of each described. The Italian begins too early to rear brood. We have here much bad weather in spring, even in late spring. The extensive brood-nest entices the bees to untimely errands for water and pollen; and many, owing to the inclemency of the weather, will not be able to return; consequently much energy is wasted, and the colonies at the beginning of the honey-flow are not as populous as they ought to be, and the result is a deficiency of the surplus. It is also alleged that the Italians do not winter well. I have not been able to test these claims. I have imported several queens at different times from the United States, but the queens seem to have suffered so much by the long confinement and the hardships of the voyage that they were not qualified for any thing. However, I think the descendants might be all right. Only one queen survived the winter. The trial would have to be made by testing from four to six at one time, and early enough in the season to raise some queens to replace those which seem unable to pass the winter.

The Carniolans stand the winter very well; are very gentle and industrious; but owing to their swarming propensity they often fail to give surplus when the common black bees do. This is particularly noticeable in poor seasons. The common black bees seem best adapted to this climate. They moderate or stop brood-rearing very promptly according to weather and season. They make their surplus more by judicious economy than zeal in gathering—at least it seems that the Carniolan is just as industrious. So far as I know, there is not one Italian colony for many miles around here—say not one in ten thousand. In other parts of Bavaria or Germany there are some, but not many. Here we have blacks and Carniolans, mostly mixed breed of the two. The principal disadvantage of the mixed breed, I think, is that they do not transmit their good qualities to their progeny as well as pure-bred varieties. Of

course this law of heredity is as true of the higher animals, if not more so.

In this report I have given an outline of the topics that were treated more or less fully by the instructor.

The metamorphosis from the egg to the grown insect was illustrated, and to the practical bearings special attention was called under the head of "How bees should be handled; the stinging of bees, and protection against it; convenient way to feed bees, and when to feed; preparation of hive and comb for moving; the various hives and frames in common use; bee-houses (bees are kept here in bee-houses, just as the reverse is true in the United States); utensils and apparatus were shown and explained; combs and frames (the wiring of frames was shown); how to manage the bees at different seasons in order to obtain the best possible results; the selection of colonies for breeding; queen-rearing; diseases of bees, especially foul brood; and, last, the enemies of bees.

This short course was a success. Mr. Hofmann was congratulated from all sides. He is well qualified and well equipped to hold such courses. Next spring we shall have two days of practical work in the apiary and in queen-rearing.

Markt Oberdorf, Bavaria.

GETTING SLUMGUM FROM THE SOLAR WAX-EXTRACTOR

BY R. F. HÖLTERMANN

For years it has been a puzzle to me how to clean out the refuse which is left in the wire-cloth basket in the solar wax-extractor. This has been particularly puzzling to me since the yield from the out-apiaries has been on the increase. As a result we have often been away when this refuse was still warm from the sun. Or if we were not away, we had returned from a day's work somewhere else, and wanted to eat our supper. After a good day's work I did not feel like asking or making any one attend to this matter. I may say that I have never been an advocate of long hours in work. To work fairly rapidly with an average of ten hours' work a day, or even a little less, is ample.

This year I hit upon the idea of heating the wire-cloth basket with the contained refuse over a fairly hot fire—a minute or two will do it. The matter softens first next to the wire, and comes off in a solid cake, and I do not believe there is a better way of cleaning the basket. Try it, and I believe you will think the same.

Brantford, Canada.

FLORIDA APIARY OF W. J. DRUMWRIGHT

BY M. L. BREWER

Each year we spend our vacation in Florida, about twelve miles below where A.I. Root has his winter home. While there it is always a pleasure to meet the beekeepers of that section. One that I met in the winter of 1910, Mr. W.J. Drumwright, is one of the veterans. It is a pleasure to talk with him. Mr. Drumwright went to Florida a little

more than thirty years ago with his family, himself broken in health. He selected a spot on Phillip Creek, about eight miles below Sarasota, when Tampa was his nearest market. He built his home there among the oaks and palms, and cleared and planted his citrus groves, and twenty-eight years ago he started in with bees. He has made them a specialty since that time.

In 1910, with 64 colonies, spring count, Mr. Drumwright harvested 400 gallons of extracted honey; 800 pounds of comb honey in sections, and 80 pounds of wax.

Mr. Drumwright is now about 77 years old, and very rugged for one of his years. He says that he has seen hardly a sick day since going to Florida.

No. 1 shows his old home where he reared his family, who are now all married and gone from home. The wife of his joys and younger days has been called to the other world, and now he is left with his bees for companions. The old place was too large



Home of W. J. Drumwright, near Sarasota, Fla.

for his needs, so at the time of our visit we found him moving on up the creek about half a mile. He had sold the old place. The bees were then nearly all transferred to the new locality, and we noted that they were in modern hives, painted white and fresh, and systematically set in regular order.

The new place is a twelve-acre tract with a nice young grove just coming into bearing. The honey-house was built, and at the time of our visit the foundation for the home of the faithful horse was being laid, and the house was to follow.

No. 2 shows a portion of the creek and the honey-house, so built that loading and unloading from the launch could be done with ease. The apiary is located just beyond the honey-house.

No. 3 shows a portion of the apiary with Mr. Drumwright sitting on one of the hives. A small portion of the creek is visible through the palms.



The honey-house on the creek.



Mr. Drumwright in his apiary.

Mr. Drumwright himself, his horse, and his bees, seemed to be the sole occupants of the place. May they live many more years to enjoy their work together.

Philo, Ill.

HOW I BECAME INTERESTED IN BEES

BY BRYAN STRUBE

One morning in May, 1912, as I was passing a schoolhouse I saw something hanging on a limb. A terrible humming sound met my ear. I knew then that it must be bees, although I had never seen so many bees before. I had heard my father talk about them, however, but he had never kept any since I could remember. I hurried home to tell my father. He took a barrel and put in two cross-pieces about six inches from the top, in order to keep the combs from falling. As soon as he looked at the bees he said that they were Italians, and that it was the largest swarm he had ever seen. We sawed off the limb and let it down to the ground easily, a distance of about fifteen feet. We set the barrel over it, and drummed on it until they started in. We then went home to wait until evening before trying to move the bees. After dark we started, taking with us a sheet and a tub. We found that the bees were all in the barrel. We spread the sheet over the tub, set the barrel down in the tub, and tied it up

like a washing of clothes, then put the barrel in the buggy and carried the bees home safely, a distance of about a mile. The next morning they were flying around, and soon began to work in their new home.

Later I ordered two Danzenbaker hives. We transferred them about the middle of August. We took about a gallon and a half of honey from the old barrel. In transferring them they swarmed out on two different limbs. We hived them in two hives. In half an hour they were all in one hive. We then supposed there was but one queen. They filled the brood-chamber and made four sections of surplus.

Ever since I have been reading all I could get on bees. I am sixteen years old, and think that beekeeping for pleasure, profit, and recreation is hard to beat.

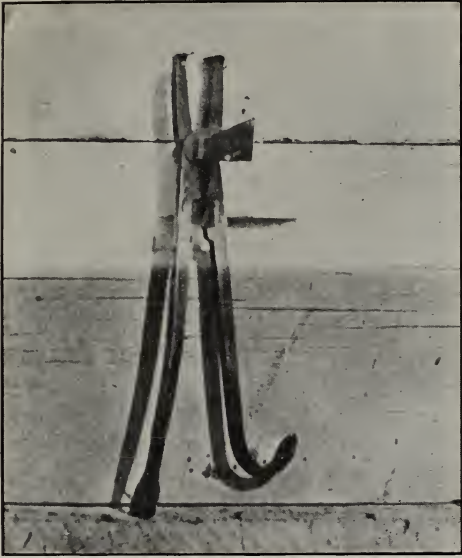
Oak Grove, Ky.

HIVE-PLIERS

A New Tool which Saves 25 per cent of Stings and Does 25 per cent More Work

BY JOSEPH GRAY

A good laugh does no one harm, and I surely had a good one at the idea of using "sugar-tongs," yet 25 per cent less stings and 25 per cent more work caused me to change my views. So from jest I turned to earnest consideration of their use, and at



Joseph Gray's combined hive-tool, frame, tongs, pry, scraper, etc.

last produced the tool shown in one of the illustrations. I have, however, given it the more dignified name of "hive-pliers."

The one thing that arrested my attention most was the firm grasp of a comb single-handed, leaving the left hand free to use the smoker, bee-brush, etc. The frames are pried apart, then grasped with the pliers,

one hand only being required to handle them, allowing the free hand full use of the smoker. When using the brush, the comb is grasped by the pliers, dropped on the front of the super sufficient to jar off the bulk of the bees, the remainder being brushed off. These tools are not laid down, hence the gain in time.

During a rush of honey the comb is just pulled over the edge of the super, and the bees brushed off.

The pry forces the nut and bolt to fasten the two jaws together, the reverse-nut end being used for a hammer.

It is self-evident that the pliers save stings. The hands do not come in such close contact with the bees; yet greater is their importance and value in handling diseased colonies. The hands do not touch the comb, only the plier jaws, and these are easily disinfected by burying them in the hot barrel of the smoker.

The first use of the pliers is awkward because one wants to lay them down and use his fingers; but after one thousand frames have been handled by them the experienced apiarist will have learned their use and their value.

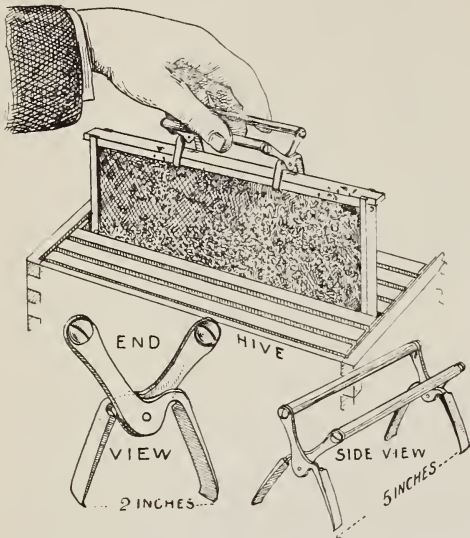
Wasco, Cal.

[Hive-pliers or tongs have been suggested by a number of beekeepers, several of the suggestions having appeared in these columns before; but extensive producers



The tool in operation,

usually do not use them, for the reason that they can get along just as well (or better) by using their fingers alone.



Another idea for frame-pliers, sent us by Wm. Grams, of Sturgis, S. D., is shown herewith. Perhaps the latter tool permits of a rather firmer grip on the top-bar, with less tendency of the frame to tip if not grasped exactly in the center.—Ed.]

BEEKEEPING A FAVORITE SPORT

BY HENRY A. SHAEFER

Keeping a few colonies of bees is my favorite sport. I have hunted, fished, played ball, and used a camera. I soon tired of all these, but not so with my bees.

My father is a farmer, and I work on his farm. I care for my bees at noon, and nail up frames and get supers ready in the evening. We live in a rather hilly country where white clover is the principal honey-plant. It is everywhere, and the honey-flow begins about June 10, and usually ends the latter part of July.

The first half-hour that I spent with the bees was a very pleasant one. I had bought a colony of bees during fruit bloom, when it happened that the weather was too cold for the bees to fly. I could hardly restrain my impatience until a warm day came. When it did come I put on my home-made veil (my bee supplies had not come yet), and without smoker or gloves I went to open the hive. I expected to get stung many times before I closed it again, but not a bee dared to be so forward.

I looked for the queen, for I wanted to see if all the talk about her being so large

was true. Three or four times I thought that I had her, only to find that it was a worker distended with honey. It would go into a cell with honey in, and I thought that surely a queen would not lay an egg in a cell half full of honey. At last I found the queen. She was much larger than the bees I had mistaken for her. I took the frame with the queen on it and proudly showed her to the folks, then took the frame back to the hive and carefully closed it, satisfied that I had seen a queen bee.

Every time after that, when I looked into the hive I saw or learned something new. That was and still is my pleasure. The work connected with keeping a few colonies is light, pleasant, and also different from all other work on the farm.

Colfax, Wis.

HONORABLE O. C. SKINNER

BY WESLEY FOSTER

The keeping of bees attracts in all probability more people in varied walks of life than any other line of work with perhaps the exception of poultry-raising and farming. The latter rural pursuits have drawn many business and professional men to their ranks from the city during the past few years.

But bee culture embraces in its list of devotees people from all ranks of life—men, women, and children. Editors and newspaper men generally seem to be drawn toward beekeeping because, no doubt, of the opportunity for outdoor work, without the physical demands that many phases of farming require.

Mr. Skinner is an old newspaper man, who is now a member of the Colorado legislature, and a beekeeper on the side. He owns something like 200 colonies of bees that he has leased to another party. But 20 colonies placed on the roof of a shed at the rear of his home place in Montrose are cared for by himself. I am showing a picture of this shed-roof apiary. Mr. Skinner tells me it is a great improvement over placing the hives on the ground, because of the greater safety to passersby. The disadvantage is that, when walking on the shed roof, all the hives are jarred more or less, which angers the bees. But the flight of the bees being above that of traffic on the street more than balances this disadvantage.

During the spring of 1911 I met Mr. Skinner for the first time. I asked him to introduce a bill in the House relative to apiary protection which had been drawn up by the committee on legislation of the Col-



Shed roof apiruy of Hon. O. C. Skinner, Montrose, Col. Mr. Skinner is speaker of the Colorado House of Representatives in the 19th General Assembly. Robert E. Foster and E. D. Nichols are standing by the ladder. Mr. Skinner is very indistinctly shown close to the barn roof.



S. A. Niver's arrangement for heating honey as it runs from the extractor so that it may be easily strained through cheese-cloth.

orado State Beekeepers' Association. This law passed the Houses, and was signed by the Governor, who, however, cut the appropriation down two-thirds.

Mr. Skinner is a small man, but correspondingly active. He is reputed to be a progressive among progressives, and has lived up to the name pretty well. The bee-men could not hope for a better helper in the legislature in securing recognition for the beekeeping industry of Colorado.

At our 1912 spring convention in Montrose, Mr. Skinner gave us many valuable points on the proper methods of procedure in order to secure apicultural legislation. We used his suggestions this winter. He is a very "likable" man.

Boulder, Col.

A DEVICE FOR STRAINING HONEY AT THE TIME IT IS EXTRACTED

BY S. A. NIVER

I was interested in the April issue of *GLEANINGS* to note that the extracted-honey producers are waking up to the need of some way to strain honey through a cloth fine enough to make it fit for table use. As it comes from the extractor, it is too thick to strain without heating. If run into the five-gallon cans, and the cans set in hot water, part of the honey gets too hot; and, besides, that takes a lot of work and bother, so they let it go, as a general rule.

Then the salesman who repacks for the retail trade has all that to do, and dislikes it, for he must carry quite an outfit, which

must be taken from town to town. He must find a room suitable to work in, spend his time heating, straining, and bottling, all of which means extra cost to the consumer.

Now that I have "reformed," and quit the road work and gone back to my first love (producing extracted honey), my thought naturally turned to some kind of invention that would heat the honey as it left the extractor sufficiently to strain through ten-cent cheese-cloth. I enclose a picture of the device we made for that purpose, and I will only say that it "gits thar," even with our California honey, which the editor has had some experience with in past years.

It consists of a tank or trough 8 feet long, 6 inches high, 8 inches wide, full of water, with two conductor pipes 3 inches wide by 2 inches deep, placed inside, entering the end under the extractor faucet an inch from the top, leaving the end next to the storage-tank an inch from the bottom.

This incline of the pipes, running through 8 feet of hot water, allows the honey to heat until it is thin enough; and as soon as it is thin enough, and not before, it hikes along to the strainer, which is placed above the storage-tank. The two oil-burners will heat the water in the trough in a few minutes; then we turn one burner out entirely, and turn the flame to half speed in the other. The water is then about right to keep the honey out of our way, even when two "ex-lightning operators" are on the job. I had to take the device out of the basement, where it is suspended from the ceiling (as we extract on a floor above), for the light

was bad for photographing; but it is so simple that I presume all will see through the scheme easily.

Allow me, Mr. Editor, to call your attention to a mistake or two in your recent editorial comments.

You said, "If not mistaken, Morton invented the telescope swarm-catcher." Nope! "I seed it first." Then you think that Canuck, Holtermann, has the biggest extractor. Nit! only 12 frames. Our merry-go-round throws 16 at a time, reverses like a Cowan, and I can take it to pieces by taking out a few bolts, screws, turn-buckles, and unhooking wires; nest the whole thing into a small space, take it to an outyard, and set it up again.

This county is three times as large as the whole State of Rhode Island, and contains (so they say) 360 beekeepers. They elected me president of their beekeepers' club, but I have met only 6 of those 360 so far.

Jamesburg, Cal.

HOW TWO SWARMS OF BEES WERE CARRIED HOME

BY J. W. STINE

I am enclosing a picture of "a good catch" in the way of two swarms which I captured five miles east of Salem while out on an inspection tour. One swarm is in the nail-keg in the seat by my side, and the other I put in a sack and hung it on the side of the buggy. Both swarms are doing fine work in the supers now. They were captured the first week in June. I thought possibly this might be a new way of carrying bees.

Salem, Iowa.

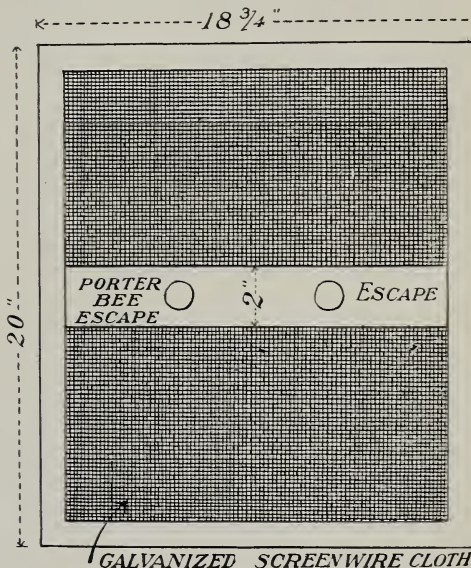


Carrying two swarms, one in a keg and the other in a sack.

WIRE CLOTH AS A SUBSTITUTE FOR WOOD IN BEE-ESCAPE BOARDS

BY ARTHUR F. HODGSON

During the past season I did considerable experimenting with the bee-escape boards with gratifying success. I think that the result of these experiments would be of



value, especially to large producers of extracted honey. So far as I know, bee-escape boards have been made of wood, the idea being to make a complete separation (except one way through the bee-escape) between the super or supers to be removed and the hive below.

In queen-rearing operations I have noticed the peculiar effect of wire cloth as a partial separation between bees, and this led me to construct a bee-escape board entirely of this material (except for the necessary rim and cross-piece containing the bee-escapes). In a twelve-frame hive I think that the two escapes are a decided advantage.

The enclosed drawing will illustrate the idea. The advantages are that the supers are very rapidly freed from bees, and the deserted combs are not shut off from the heat of the hive. In cool weather this is a decided advantage where combs are to be extracted, and in hot weather it is equally advantageous, as the bees do not feel their contracted quarters as much, considerable heat being taken up by the beeless combs above.

It may be argued that bees separated by wire cloth would pass honey through to their fellows below (even during the few hours there are bees on both sides of the



A GLIMPSE OF OUR DASHEENS AT MEDINA.

The above picture was taken about ten days ago; and to-day, July 30, owing to a very warm spell of weather, accompanied with abundant summer showers, they are almost twice as high; in fact, some of them, if they keep on at this rate, will soon be as high as my head; and the Evergreen sweet corn, right back of the dasheens, is all tasseled out and higher than I can reach. In fact, it is about the finest-looking sweet corn I ever saw. Do you catch on? It is the heavy mulching of stable manure that was put around the dasheens. You can see the fragments of cornstalks in the manure that were used for bedding. You can just get a glimpse of the potatoes further on at the end of the dasheen rows. They not only cover the ground, but some of the vines stretch up higher than my head, although early potatoes. You see the potatoes, Hubbard squashes, and every thing else, "got wind" of the generous feed, and commenced sending out their white rootlets all over into the dasheen patch to get "inspiration." The Solomon's Island gourd or "guado bean," in the middle of the row does not show in the picture; but it would show if taken to-day. It grew about a foot and a half while I was absent in Michigan. A letter just received from my nearest neighbor, C. L. Harrison, reads as follows: "Some of my dasheen is 62 inches high, and the leaves are 26 inches long, 21½ inches wide. I have used some of the small shoots for greens. They are excellent now, July 24. —C. L. HARRISON, Bradentown, Fla."

screen), and thus deplete the combs. After careful observation I failed to notice such a result. My experience goes to show that, if honey is passed through the screen, it is up rather than down. For example, a super fitted with wire-cloth bottom (nuclei for queen-rearing) placed above a strong colony will become clogged with honey from the colony below.

I feel quite confident that, with these rapid escape-boards and my eight-frame power extractor, I can handle alone a probable ten-ton crop this season.

In using these bee-escapes there is no back-aching job shaking and brushing individual combs to free them from bees with the consequent killing and injuring of hundreds of the season's best workers, to say

nothing of the return in stings, and the danger of robbing is reduced to a minimum.

After carefully trying frames with both one and two escapes I am satisfied that there is an advantage (in length of time required) with the frame having two escapes; but this advantage is not important as regards freeing the super of bees. However, when I considered the small extra cost with two escapes it seemed practical to use them; for if, for any reason, one did not operate, the other would. I have never had a Porter escape that did not work beautifully; but I do not wish to take any unnecessary chances confining bees, as confined bees will very rapidly raise the temperature, and this would be disastrous, besides not accomplishing the desired results.

As for the time required, I find that, at the close of the honey-flow, when combs are almost capped, that 24 hours is quite practical. I have put the escapes on early in the morning and found the combs free of bees by evening. As a colony requires seven or eight hours to realize its queenlessness, just so a few hours must elapse before the bees in the super feel their separation. Then the escape works rapidly.

The peculiar adaptation of the screen occurred to me while using a screen frame in connection with cell-getting. I advise the use of galvanized wire cloth on account of its durability.

To give you what I consider the supreme test of this wire-cloth-escape frame, please note: Through some carelessness in manipulating, a queen had possession of two twelve-frame supers in a powerful colony; and as I did not wish to take the time to shake the bees off the combs, and thinking it would be a most rigid test, I put an escape frame in the place of the queen-excluder. Thirty-six hours later I found the queen among a lot of newly hatched workers, and, of course, the drones. I have fifty of these escape frames in use, and I intend making fifty more for next season. I am running 225 colonies, twelve-frame Langstroth hives, entirely for extracted honey.

Jarvis, Ont., Canada.

[See editorial.—Ed.]

BUILDING COMBS OUTSIDE OF THE HIVE

BY A. I. ROOT

One of our men who has been out buying honey reports that he found a beekeeper near Columbus Grove, Putnam Co., Ohio, who had over 100 colonies; but he was so "busy with something else" that he had not had time to look after his bees, and the result was they filled all their supers, then clustered outside of the hive, and there built combs and stored honey. The well-filled and capped sections had been left on the hive until they were so travel-stained that the honey was any thing but first-class.

The above incident reminds me of something that happened years ago. A beekeeper with toward a hundred colonies lived three or four miles from Medina. I sold him some modern hives and fixtures, including an extractor; and one season when we were having our great flood of honey I thought I would run over and see what Mr. Pratt was doing. He had not used the extractor at all, although his hives and upper stories were crammed full of honey. He gave as an excuse that his farmwork

was so crowding that he had not had time to "fuss with bees." I asked him what farmwork. He said his corn had to be cultivated. I told him the honey he had lost was worth twice over the produce of his whole cornfield, even if he had a big crop. He could not believe it. Then I showed him what we had extracted from about the same number of hives. Finally he said, "Why, would you advise me to let the cornfield grow up to weeds?"

"Certainly," said I.

"Why, what would the neighbors think and say?"

"Mr. Pratt, I would not care a cent what the neighbors say; and, besides, when those same neighbors saw you taking a couple of tons of beautiful honey they might not say any very bad things after all."

The moral to the above is, what is the use of being a beekeeper if you do not "have your dish right side up when it rains porridge"?

STRAY SWARMS SHOULD BE HIVED ON STARTERS

Danger of Foul Brood

BY A. H. SNOWBERGER

I wish to give a word of caution to beekeepers about a matter that has given me much concern and uneasiness during the last few months; and that is, hiving stray swarms.

Late last season a very small stray swarm clustered on a neighbor's hay-loader while he was at the barn unloading hay. I was sent for, post haste. I was glad to have the bees, as my apiary was much reduced by the previous winter's loss. There was not over a quart of bees, and I supposed it was a very late after-swarm with a virgin queen. I hived them on empty combs, and gave them a comb of hatching brood; but I soon found that they had a laying queen and not a virgin. By feeding and giving another comb of brood later, I built them up into a fair-sized colony, and wintered them; but as soon as they commenced brood-rearing in the spring I noticed something wrong with the brood. I kept them under observation, thinking that they would soon be all right. But instead, they got worse.

I had never seen foul brood; but from descriptions I had read I diagnosed it as foul brood, and a bad case at that. The queen seemed to be a moderately prolific layer; but so much brood died that the increase was slow. Finally I shook the bees into a clean hive, having only half-inch starters, and burned their combs, frames, and brood, and disinfected the hive. At the

same time, I sent a sample of their brood to the Bureau of Entomology, Washington, and soon had an answer from Dr. Phillips, stating that the trouble was American foul brood. He also reported the case to our State Entomologist at Indianapolis, who immediately wrote to me for further particulars. I answered at once, and arrangements were made for an inspector to call on me soon. The inspector made a thorough examination of my apiary of 37 colonies, but could find no foul brood. Even the colony that had been infected he pronounced all right, but said they undoubtedly must have had it, or Dr. Phillips would not have said so after seeing the sample. He gave me a clean bill of health.

I now see danger in living these stray swarms, although I hived three this season which are doing well. If I hive any more I think I will hive them on narrow starters instead of empty combs, then the honey they carry with them will be consumed before they have any brood to feed.

This swarm that I hived last season, and that caused all my trouble, was evidently not an after-swarm, but an old colony so reduced by foul brood that they had deserted their old home, and I hived them to my disadvantage. There are but few bees kept in the neighborhood, and there is no disease among them, so far as I know. The infected bees might have come from a tree in the woods. I was fortunate in discovering the trouble so soon.

Huntington, Ind.

HOW I CHOOSE A BREEDER

BY MAJOR SHALLARD

I was at one of my branch farms lately, where they were extracting. My son asked me to choose a queen to breed from, as he wanted to raise some new queens to replace some mongrels. I had no time to go through any hives, as I had to get away to extract at another farm; but I walked through and chose half a dozen by external signs.

The first two I came to were hanging out. I passed them by, as bees that hang out, in my opinion, are no good. I came to a four-story hive. This looked good because the bees on this farm had only combs they could occupy; and where most of the hives were two and three story, the possession of four showed honey-gathering qualities. I then had a look at the bees at the flight-hole.

They were all evenly marked with three bands. They had a fair number of bees fanning, and they were working steadily. What I mean is that there was a steady stream of

bees going in and out. Some bees make a great show at the flight-hole. They fly about a lot, hover over the flight-board before they alight, and fuss about on coming out before they finally leave for the fields. These bees were not doing that. They flew straight at the flight-hole, dropped on the board, and ran right in. The bees that fuss a lot never get much honey—at least that is my experience.

Having satisfied myself that the queen was pure, and that her bees were good workers, the next point was how much honey they had. I put my hand under the back of the bottom-board and tipped the hive. It required an effort to raise it at all, and it was apparently full of honey. I picked out five more hives with the same characteristics. They were all four-story hives. I said to my son, "Go through these six hives and pick out the one with the minimum amount of honey and the maximum amount of brood in the bottom story. Choose a queen that is large and long. It does not matter if she is a bit black toward the tail; but the black must be solid, and gradually merge into the yellow, or the yellow into the black, whichever way you like to put it; but there must be no suspicion of any black ring. She should lay a good plump egg, and all at the same angle, or as nearly as possible, and the brood should be in solid sheets. The bottom-board should be clean; and if she has these other qualities it will be; and, above all, her bees *must* be good honey-gatherers. Without the latter qualifications all the others go for naught."

In comparing these six queens one will show more of these desirable qualities than the others, and that is the one, so far as can be told at this stage, to breed from.

The next step is to breed from her, and see if she reproduces herself in appearance and honey-gathering qualities in her daughters. If she passes the second test she is good enough to breed from until another queen is found which has all her good qualities, and will get more honey.

South Woodburn, N. S. W., Australia.

When to Introduce Virgin Queens

With reference to waiting three days after taking a laying queen from a mating-box before giving a cell or virgin queen, as advocated on p. 466, July 1, I would say that I put in virgin queens immediately after taking out the laying queens. I use the smoke plan. I noticed one that I introduced July 5, at three o'clock. I examined them at four o'clock, and she had mated in one hour after I had introduced her.

I have tried the smoke plan on requeening strong colonies, but I do not have good success.

Brook Park, Minn., July 11.

HARRY BELL.

Heads of Grain from Different Fields

How doth the little busy bee
Delight to bark and bite,
Making honey all the day
To eat it up at night!

Trouble from Mating-nuclei Swarming Out

I want to know how to keep my nuclei from swarming out and leaving their hive. They will leave honey, young larvae, eggs, and hatching bees, and swarm out. My honey crop is almost an entire failure this year.

Jellico, Tenn., July 14.

CURD WALKER.

[We could answer you a little more satisfactorily if we knew what size or kind of nuclei you are using. If you are using the small Pratt baby nuclei you will have considerable difficulty about their swarming out in spite of anything you can do. If, however, you use the larger size, the twin-mating nuclei, you will have comparatively little trouble providing you put enough bees in each side. The little combs should be well covered with bees; and in order to make this start it is better to get the bees from some outside location. Shake them into a large box; then dip them up by dipperfuls and pour them into the boxes. If you keep these bees strong enough and the queen long enough so that they can keep the frames filled with brood there will be very little swarming out. At certain times, however, we advise the use of perforated zinc with which the nuclei are supplied. Queens must not be kept longer than enough to lay eggs in the frames, or there will be danger of the bees swarming out.]

If, on the other hand, you are using the larger nuclei, employing standard frames, there should be no trouble about their swarming out. In any case, you will, of course, recognize the importance of keeping nuclei supplied with food. If they do not have honey or stores in their combs they should be fed of course.—ED.]

Why the Queens Died in the Cages

Five queens were bought of a New Jersey breeder and mailed about 20 miles on July 4. On the 5th at 9 o'clock the queens were killed in five colonies to make room for the new stock, and one queen-cage placed in each just below the top-bar with the combs squeezed against the cage to hold it in place with the wire-cloth side down and the thin cardboard removed from the candy end. At 3 o'clock P. M. on the 7th an examination showed the queen and all the bees dead in four of the cages, and the fifth apparently all right except that the candy had not been eaten out. A hole was punched in the candy, and the queen released and accepted. The candy was hardly touched in the four cages. No bees were dead in the fifth cage. The queen candy seemed a little dry, but not enough to make it seem impossible for the bees to use it without difficulty. The breeder says all were treated alike. Have you any clue to the trouble?

E. G. CARR, Bee Inspector.

New Egypt, N. J., July 8.

[There are two causes that might account for the death of the queens. One is the kind of wire cloth used on the cages, and the other the condition of the candy. Referring to the first mentioned, bees are sometimes poisoned by the paint used on the cloth. If it is green we have known of instances where the queens have died. But usually they will arrive in rather bad condition. It is hard to explain why the bees should arrive in fair order, and then die after they were introduced. Taking every thing into consideration, it is our opinion that the real cause was the condition of the candy—that is to say, it was too dry. It was moist enough to get the bees through to their destination, but the bees and queens were probably in a weakened condition at the time they were introduced. The dryness of the candy did not enable

them to survive long. The condition of the candy may be explained by saying that four of the cages had poor candy while the one cage had candy that was a little more moist. The great problem of sending queens by mail is getting the candy just right—not too sticky or moist, and not too dry on the other hand. You state that the candy seemed a little dry, but you think not enough to make it impossible for the bees to appropriate it. Our opinion is that, if you will take these cages where the bees died and put some fresh bees in them, you will find that they will not live more than 24 or 48 hours at the most. If you will put a like number of bees in the other cage where the queen did not die we think you will find a difference in results.—ED.]

Can we get Alfalfa Growers to Cut their Alfalfa Later?

How am I to persuade the people of this section to cut their alfalfa at the right stage? They cut it, to my notion, before it goes to bloom. There is a fine future at this place, providing I can get them to cut it at the right stage. I never in all of my life saw the like of wild bees on the mountain sides. This is what they call Round Valley, containing about 10,000 acres; and as I am only a beginner I should like advice on the subject.

Covelo, Cal., July 5.

F. F. TURNER.

[We suggest that you correspond with Dr. A. J. Cook, Horticultural Commissioner, Sacramento, Cal. He might be able to advise you on this matter. We might say, however, that there has been a tendency on the part of alfalfa-growers to cut their alfalfa just about or a little before it comes into bloom. Some of them have asserted that it makes a little better quality of hay. On the other hand, we have heard that statement contradicted by those who claim to know; but this is, nevertheless, the fact, that the alfalfa-growers are a little behind on their schedule anyhow in cutting their hay, and in most cases they are not able to cut it until it is well into bloom.]

Generally speaking it would be pretty hard for a beekeeper to convince an alfalfa-grower that it would be to his advantage to cut his hay a little later in order to accommodate him, the beekeeper. It looks too much like a case of an ax to grind. If, however, you can get hold of some literature that would show that this early cutting is a mistake it will help materially.—ED.]

Experiences with Bees in a City Apiary

Owing to the comparatively mild winter of 1912 the bees of my suburban apiary came through unusually strong, with no loss, and as pollen was carried in as early as March 12, colonies were soon filled to overflowing with bees. Heretofore I had run exclusively for extracted honey; and in order to give more room it has been my custom, in adding another story, to put in two frames of brood and fill out with empty combs. This spring, however, I had an exceptionally strong colony almost filling two stories; and as it was necessary to add a third one I decided to deviate from my usual custom in giving more storage room. I accordingly prepared a third story and placed it between the other two.

What I most wanted to avoid (swarming) turned out just the other way. I reasoned that the queen now had plenty of room for laying; also that there was sufficient room for storage; but it seems that the bees in that upper story, having been removed from their companions by having a full-depth super placed beneath them concluded they were queenless. They promptly started a fine batch of queen-cells before I was aware what they were up to, and cast a monster swarm. While they were clustered I cut out every queen-cell and shook the bees from every comb, and then returned the bees to their

hive. Hereafter I think I will adhere to my old methods of tiering up.

I run exclusively for extracted honey; however, I tried one hive for comb honey this spring, but with disappointing results. Just before locust bloom I put a super of sections and bait combs on this colony; and as they had every available cell in the brood-chamber full of brood and honey I concluded it was in ideal shape to work in the sections. They started to draw out the foundation in good shape, and then promptly swarmed. As the queen was clipped they naturally returned; but a few days later she disappeared, and now the bees are starting a second batch of fine peanut-sized cells. Such proceedings disgust me with the production of comb honey, and I think this excessive swarming is the chief reason why so many prefer to produce only extracted. As I receive 20 cts. per lb. for the latter it would scarcely pay me to bother with comb honey.

Several months ago I purchased a straw skep, and am having lots of fun with it. I built up a nucleus until it was pretty strong, and then made it swarm, hiving the bees in the skep. They are filling it with comb in great shape, and this old-fashioned hive of by-gone days is a subject of interest to all who visit my home.

Cincinnati, O., June 4.

ALBIN PLATZ.

To Get Rid of Ants

On page 118 of the A B C and X Y Z of Bee Culture you show a method of piling up honey-supers filled with honey to prevent getting sour. How do you manage to keep out the large black ants found in the honey-house? As soon as I put a filled super in the honey-house I am sure to get at least five or six large black ants in there; and unless I pile the supers tightly on top of each other, and something almost air-tight (wire screening is no good) on top of that, the ants get in. They then manage to perforate the comb (only here and there) enough so they leak out, so I can not sell them as perfect ones. What would you advise?

Butler, N. J.

MRS. A. HENDERSON.

[If you are troubled with ants of any sort the plan mentioned would not work. The first thing to do is to locate the ants' nests wherever they may be. If they can be found, pour about half a pint of bisulphide of carbon into a hole made in the center of each nest with a crowbar. After pouring in the liquid stop the hole up with earth and you will find shortly after that the entire nest, eggs and all, will be destroyed. If you are unable to locate the ants' nests you can still employ the same method described in GLEANINGS by placing the pile of supers crosswise upon a board or table. The table legs should stand in tin cans of water or grease. For this purpose the table should be low down and large enough to take up several tiers of supers, providing you have very much comb honey to pile up in this way.—ED.]

Bees Dying Just Before They Hatch

Gentlemen:—Yours of the 16th is received with the booklet, "Bee Diseases," which I have read carefully, but find nothing that corresponds exactly with my trouble, as the bees appear to die when three-fourths developed, as you will see by enclosed, while many that mature and cut out of cell apparently perfect, can not fly, are undersized, and weak. There is no odor, nor sign of paralysis.

Wilkesburg, Pa.

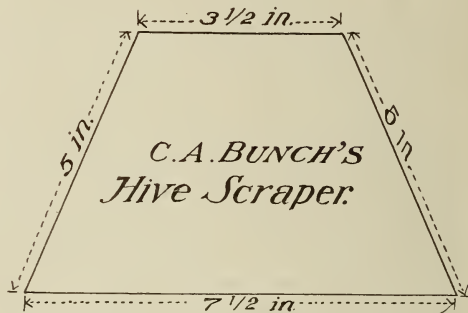
W. D. KEYES.

[The cage of dead bees has been received. The bees show very clearly that they are undeveloped young bees that have been picked out of cells of combs. It would be our opinion that this brood had been chilled or overheated at some time. A comb that is allowed to stand in the sun for a very short time on a hot day would become so hot that it would kill the brood, or at least a large part of it. In the same way, a cold chilling wind or a frosty atmos-

phere will destroy brood, resulting in young bees hatching out that are imperfect or dead. One is apt to gather the impression that it is pickled brood, foul brood, or some other brood disease. Brood dead from these diseases does not look like the specimens of dead bees received. In fact, they never attack bees almost ready to hatch. Brood may die in this way that has never been exposed to the sun. Sometimes the entrance is closed up temporarily, allowing the colony to become so heated that the brood will be affected.—ED.]

A Handy Hive-scraper

I am sending you a description of a hive-scraper that I have had in use for about 25 years. It is nearly the shape of a letter A, only the top of the scraper is $3\frac{1}{2}$ inches wide, 5 inches each side, and $7\frac{1}{2}$ across the bottom. When using the scraper I hold the top edge with one or both hands. This



scraper is made from a piece of old crosscut saw. The long side or bottom is always kept filed off square. This makes a good implement for scraping off propolis and other refuse about the hive.

Lakeville, Ind.

C. A. BUNCH.

Learning by Costly Experience

When I first began beekeeping I knew in a vague way that a queen, drones, and workers compose a swarm, and that the workers gather the honey. That was practically all I did know until I began to read up on the subject of bees.

I had a colony of bees (in a store box) which I had caught the previous summer, so I transferred them into two home-made hives which I bought. I took out about 75 lbs. of honey. I bought two Italian queens, but lost one in introduction, and the other in the spring through robbing. Those bees were very cross; but I think now that they had good reason to be so, as a man who has never seen bees handled has to learn a good deal by experience, no matter how much he may have read.

Well, I bought two more colonies from a farmer, and became accustomed to being stung quite regularly by them. I secured a fair amount of honey also. Then when the craze for Caucasians came I got some queens and introduced with very good success in the early part of the season, but lost two out of three in the fall when I thought I knew all about introducing. Those bees did very well, and I raised a few queens by the nucleus plan, but got most of them mismated, and could distinguish them from the blacks only by handling. I had by this time seen drone-laying queens, and had laying workers.

About four years ago I bought five colonies cheap from a neighbor, and transferred in the early spring to Danzenbaker frames. I got a fair crop of clover and milkweed honey; but in August I noticed something wrong. The bees were not working well, were greatly reduced in numbers, and there was a decidedly sour smell on opening a hive. So I began buying Italian queens, destroyed some of the worst combs, and doubled up some weak ones. I lost two

in the winter, and started with six good colonies in the spring with hardly a sign of foul brood in the hive. Although in this county a good many small beekeepers have lost all their bees, I have not noticed a sign of disease in two years.

I have never seen an expert handle bees, nor have I done any thing original; but I have transferred bees for men who had kept them long before I thought of it. I have raised some good queens; have divided bees, and have introduced queens for beginners. I have tried to increase the interest in beekeeping among the small beekeepers in this neighborhood.

Waynefield, Pa., Feb. 17. WM. ROSEMERGEY.

The Striking Appearance of the Cocoons in Combs Melted by the Sun's Heat

I have recently had some old brood-comb exposed to the sun in such a manner that it has become disintegrated in such a way as to be very interesting. Since seeing this I have wondered if it is generally known how that each individual cell is made complete and united with the adjoining cells, and also to the central walls, by a substance of a different consistency from that of which they are composed. If information along these lines, together with photographs which might be taken illustrating such structure, would be of interest to your readers, I should be glad to furnish such.

Duluth, Minn., July 21. S. GEO. STEVENS.

[What you describe in your letter has been observed by all those who melt their combs in solar wax-extractors. The same condition will very often appear when combs are melted by artificial heat in hot water. What you observe are the cocoons left by the bees from brood-rearing. When their combs are melted by the sun or in such a way that the structure of the cocoons is not disturbed, the appearance is quite striking and remarkable to one who has never seen any thing like it. There have been numerous photographs of it. Indeed, it is quite a common sight to one who has any thing to do with melting up old combs. New combs when melted up will show nothing of this kind, because there will be no cocoons left as a residue.—ED.]

Where to Keep Honey

What kind of place is the best to keep honey fresh? What should the temperature be?

New Lenox, Ill., June 26. M. J. SIMMER.

[The best place to keep comb honey is in a warm or hot dry room. A cellar, refrigerator, or cold room is the very worst place. When we say hot dry room we mean a room where the temperature may go up to 80 or 90 degrees in hot weather, and where it will never go below 70 degrees in cold weather. Extracted honey, however, may be kept in a colder room, but it will granulate. If the honey is in bottles it should be kept in a warm dry room the same as comb honey. Otherwise it will granulate, especially if the temperature is inclined to go down to freezing, then go up to ordinary living temperature.—ED.]

Bees' Turnstile

Please mail me copy of GLEANINGS containing the following clipping, which was printed in Newark, N. J., *Morning Star* July 8, 1913.

Elizabethtown, N. J. ELMER E. GUY.

A novel and ingenious device known as a bee meter, which serves much the same purpose as the turnstile at an amusement park, is in use by a western beekeeper. The bee, in passing through an entrance or exit, deflects a thin delicate spring. To this spring is attached a wire, and the deflection of the spring causes the wire to hook over a tooth on the rim of a paper counting-dial. As the spring returns to its normal position the dial is rotated slight-

ly, and counts one unit. A lug on the unit operates the ten-unit dial, as in the ordinary counting-machine, and this system is continued to include a 1000-unit dial capable of registering 20,000. The spring is so shaped to prevent a bee from going out through an entrance or entering through an exit. This device renders it easy to estimate the activity of a colony, and to determine the number of bees that go out but fail to return.—*Popular Mechanics*.

[The clipping did not appear in GLEANINGS. We doubt very much whether the thing was ever done, although we concede that it would be possible, perhaps, but decidedly improbable. There is such a thing known as a bee-escape. This has two sensitive springs between which the bees pass, but, so far as we know, no recording-device was ever used in connection therewith.—ED.]

Why a Queen Sometimes Lays in the Sections

My colonies all succumbed but one, and that is the strongest one I have. It is boiling over with bees all the time; but the queen in this colony has been laying eggs up in the sections. The first super I took off had drone brood in some of the sections. The next had bees and a queen-cell. I should like to know the cause of this, and the remedy. This colony has made at least 150 lbs. of honey, which would all have been perfect sections had it not been for this brood. The upper part of the section would be honey and the lower part brood. Twelve of my colonies have averaged 100 lbs. of honey each.

Shelby, Ohio, July 21.

SARA A. KERR.

[As a general rule, in the production of comb honey queens will not lay in the sections. Occasionally, however, we find one that has a tendency to go above. In such cases it is advisable to use a queen-excluder; but while such devices are commonly used in the production of extracted honey they are rarely used in the production of comb.

It sometimes happens that a queen will lay in the sections for the simple reason that there is no drone comb in the brood-nest below. When only starters are used as sections the combs built below will very often and generally be drone. If there are no drone-cells in the brood-nest the queen is quite inclined to go above and lay in these cells. Usually there will be enough drone-cells in the brood-nest to satisfy all reasonable demands of the queen.

Rather than destroy the queen that you have, your better way is to put a perforated zinc honey-board over her next year.—ED.]

Start in Beekeeping Made by Capture of a Swarm of Bees

One day the last of June, several years ago, a swarm of bees clustered in a tree near our house. Mother saw them and called father and myself. It was the first swarm I had ever seen, and father had never seen a swarm hived. We borrowed from a neighbor an old-style chaff hive, and, putting it in a buggy, we ran it under the swarm—father with his stockings over his pants, a rain-proof coat, a pair of mittens tied over his coat-sleeves, and a veil made of a bag and mosquito-bar. He shook the bees into the top of the hive, and put on the cover.

Father gave me his share of the bees, and a few nights later I set them on the ground and took the buggy away. The bees acted lost for about a day.

The neighbor from whom I had borrowed the hive told me to put a newspaper over the frames, and not to put any sections on, for the bees wouldn't make more than enough to winter them.

In a few days the bees had gnawed the paper full of holes, and were carrying it out. I piled on more paper.

Next I visited an old beekeeper who told me to use oil-cloth instead of paper, and to put on some

sections. He also lent me the A B C of Bee Culture and some copies of GLEANINGS.

After putting on the sections I got about thirty pounds of dark honey. This interested me, and in the spring I bought enough bees so that I had ten good colonies and two nuclei. From these I secured 700 pounds of honey, and increased to 24 colonies. The best colony gave me 130 pounds. We now have about 100 colonies. The best one last year gave 180 pounds of comb honey. I have had a colony of black bees for five years that has never swarmed, and which has made about 100 pounds each season for four years out of the five. The other year this colony made about 80 pounds. This is by far the best average of any colony I have ever owned.

Lottsville, Pa., Feb. 7.

EDWARD CARR.

Bees and Chickens

The frequent articles in GLEANINGS regarding the action of poultry toward bees lead me to report my own observations. I have so planned my building for housing a few chickens in the city that my half-dozen colonies of bees can be wintered in the same building. The entrances are placed about 2½ feet from the ground. Although the alighting-boards are higher than a tall fowl can reach, yet several of the young cockerels in some manner acquired the habit of jumping up and catching bees while flying. The hens seemed to pay little attention to the bees, although I observe that a bee flying too near a hen is pretty sure to be caught.

This season I have been troubled with bees attacking chicks only a few days old. They would often fasten themselves in the down upon the wings and back, and would at times keep the mother hen busy picking them off, which she was able to do with great dexterity. In some cases I found the chicks suffering, and on examination I would find stings in the feet. As a last straw before deciding to remove all bees from the building, I found a chick four or five days old in convulsions, and deserted by the mother hen. The chick was determined to tie its neck into a knot, and seemed to be doomed. On opening its mouth, a bee-sting was found in the tip of the tongue. The sting was removed, but the convulsions continued for three or four hours, when the chick completely recovered. I believe that the chick had swallowed a live bee, which, without doubt, was raving about in its crop. I think the experience shows that bees are apt to be worse for chickens than chickens are for bees. Although none of the chicks were killed, I feel sure that several were severely stung.

Ypsilanti, Mich.

F. R. GORTON.

Light-colored Hives Cooler than Dark-colored Ones

I have just read with keen interest the friendly "scrap" between our genial friend Dr. Miller and his alert and keen adversary, the editor; and if the latter will be so kind as to give these few lines space I should like to state a few experiences and observations in my own little apiary of 14 colonies. I have my hives painted in three colors—light gray, dark red, and dark olive green. To-day, June 21, the weather is hot, partly cloudy, and sultry—90 in the shade at 1 P. M. Walking among the hives I notice that the bees in the gray hives are working busily—probably ten bees ventilating on the outside on an average. Those in the red hives seem to feel the heat more, and there are at least twice as many fanning, and as many more walking back and forth on the alighting-boards, doing nothing.

Coming to the dark-green hives I notice about a quart of bees covering the fronts of the hives above the entrance, and several knots of them hanging below the entrances besides. These bees seem to feel the heat the most, and there are several rows of bees extending at least six inches from the entrances, al-

most fanning themselves off their feet in an endeavor to keep their habitation properly ventilated. I also find that the covers of the latter are by far the hottest.

It is evident that our worthy editor is entirely right in maintaining that bees do better in a hive painted white or light gray than those in dark-colored hives, as the latter absorb the heat, while the former repel it. For the same reason light colors in clothing, shoes, etc., are much cooler in hot weather than black. I intend to paint all of my hives white next fall.

Cincinnati, O., June 21.

ALBIN PLATZ.

Bees Building Comb to Fences

I had my first experience in taking honey. Having noticed, some days ago, that the boxes were being filled, I removed the super to-day and replaced it with an empty one. Although nearly every box was filled with superb honey I found, much to my chagrin, that the honey in nearly every box was attached to the three-panel fence, and I got only about half a dozen salable boxes. Now I am writing to know what hive I can use to avoid, this difficulty. I am contemplating going into the bee business to a small extent, but this, my first experience, is disheartening. Surely there are hives in which honey can be produced without running such risks.

Angola, N. Y., July 21.

C. S. PALMER.

[Occasionally we run across a queen whose bees will build the comb up against the slats and posts of fences, but cases of this kind are not common. You would have no trouble with such a queen by using what is known as the old-style slotted sections and separators. Your difficulty can be avoided, however, to some extent by giving the bees more room while they are filling. In other words, give them an extra super on top while they are filling the lower one. Sometimes it is advisable to put the extra super under while they are working on the upper one. As the season draws to a close, take away the partly filled super and allow the bees to finish up the work in the supers nearly completed.—ED.]

Bees Confused by the Moving of a House that Stood Close to the Hives

I have my bees in my backyard about 20 feet from the house. I moved the house back to build in front. We began moving the house back without having changed the position of the bees. When we had moved it back about 16 feet we noticed that the air was full of flying bees; but we never thought of any trouble until one of the men was stung.

I knew then that there was something wrong; so I watched them a while and soon found the trouble. I picked up one of the hives and moved it about the same distance from the house that it had been in the first place. The bees all settled down again, so I carried the two other hives to the new location, and in a few minutes the bees were as quiet as ever.

Horse Cave, Ky., May 26.

C. S. RHEA.

Do the Northern bees that have been bred to withstand the winter cold thrive in the far South where they may be busy every month of the year?

Dawes, Ala., July 10.

E. M. DOWNER.

[There is no difference, so far as we know, between Northern and Southern bees. They will work just as well in one locality as another, providing there is honey to be gathered. Some strains of bees, notably the darker ones, it is thought, will stand the cold winters in the North better than the extra-yellow bees from the tropics, but the difference is very slight if any.—ED.]

Our Homes

A. I. Root

I have been young, and now am old; yet I have not seen the righteous forsaken, nor his seed begging bread.—PSALM 37:25.

His leaf also shall not wither; and whatsoever he doeth shall prosper.—PSALM 1:3.

I want to talk to the younger ones, and perhaps some of the older ones also, in regard to the matter of "good luck." On another page I speak about lucky stones. So many people still continue to believe in that sort of good luck that *over a hundred* testimonials are given. Of course, I do not know whether the testimonials are genuine or not; but I *do* know that quite a number of good people carry senseless things in their pockets or on their watch-fob, to bring good luck. Our older readers, at least, have heard about its being a lucky thing to find a horseshoe. Well, if you have a horse lacking a shoe, and the shoe you find just fits, it may be what is called good luck; and I do not know but it is true that the man who is picking up and saving horseshoes, or any thing else lying around loose, may be more "lucky," as the world expresses it, than the man who lets valuable property and material lie about loose here and there. It has always been my fashion, especially around our own premises, to pick up and put away horseshoes, pieces of iron piping, bits of wire, both iron and insulated copper wire such as the electricians scatter about; and I have a faculty of remembering where I put these things. Pieces of iron wire I hang on the fence near the gate; and then when a bit of wire is needed in an emergency I can almost always lay my hand on it quickly. Such a habit, without question, *brings* good luck.

Years ago, when lotteries were permitted to flourish in our land, there was much said about lucky numbers; and we were told that some people were always lucky in investing in lotteries. My feeling has always been, however, that the person who secures prizes by investing in a lottery is really the unlucky one. Money that comes in that way, or without hard earnest labor, often proves a curse rather than a blessing. Captain Rand, in advertising his lucky pebbles, says that one who has one of those pebbles in his pocket will always prosper, no matter what he invests in or goes into. He does not exactly quote scripture to prove it, but what he states is something like one of the texts I have chosen—"Whatsoever he doeth shall prosper." And, my good friends, both young and old, I am glad to be able to tell you this bright summer morning *how* to be lucky and prosperous in all you undertake. That beautiful first Psalm, which

I have often quoted, and which, it seems to me, must have been written when David was comparatively young, sounds boyish in its bright hopefulness. Now, then, what are we to do and how are we to live so that all our undertakings will be prosperous? May be you had better get your Bible and look over that first Psalm with me. First, you are to keep out of bad company. You are not to walk with them, nor stand still in a bad crowd; and you certainly will not be lucky if you sit down and visit with those who pick at the faults of Christians, and make fun of God's holy word.

Years ago our boy Ernest had a playmate who lived near by. One day his mother heard Ernest using bad words. She asked where he had learned them. When he told her she told him he would have to stop playing with Edson if Edson persisted in such talk. Edson came around pretty soon and asked why Ernest would not come out and play any more. Ernest told him of the trouble; and after a while Edson was induced to give up his bad talk, because he found out that Ernest would go straight home when he used swear words. Later on, an acquaintance of mine was apparently thoroughly converted; he gave up drinking, and promised to lead a new life. But after a time, however, he was seen among his old comrades. When we remonstrated, he replied that it was pretty tough to know that he could not see his old friends, and sit down and talk with them. He said some of them might be made better men. Accordingly he would go into a saloon and sit down and talk with his old boon companions. I hardly need tell you how it turned out. It transpired, as we have it in that first Psalm, that it is exceedingly dangerous to "sit in the seat of the scornful."

The next verse tells us what a man ought to do to be lucky. It says, "His delight is in the law of the Lord." The law of the Lord is this precious book that I am now holding in my hand. And we are further told of this prosperous man that "in his law doth he meditate day and night." There you have it, friends. If you wish to be prosperous, if you are striving for good luck in your undertakings, just make this book your lucky stone. Use it as the iron-clad pledge of the Endeavor Society reads, "I promise to read my Bible every day." Not only are you to read it every day, but you are to make it your constant study "both day and night." If you do this you will eventually grow like a tree "planted by the rivers of water." I thought of it

when Dr. E. F. Phillips told me the dasheens grew in those far-off islands of the sea with their little white roots reaching over into a rivulet of water. "His leaf also shall not wither." How many times we feel blue and troubled when it does not rain, and the leaves of our crops begin to wither and turn yellow! When there is plenty of rain, however, as we have had this season (throughout Ohio and Michigan at least), there is no withering of the foliage. It is like my garden and the beautiful dasheens with their leaves a foot and a half across, on this last day of July, 1913. Then David goes on to say, "The ungodly are not so." They may prosper for a time, but sooner or later they are gone, and their memory is forgotten, "like the chaff which the wind driveth away."

As I come nearer to my 74th birthday, and look back over the record of my friends and acquaintances, those who ridiculed God's holy laws are gone and forgotten. Not so with those who labored for righteousness and the good of humanity. Their memory still lives, and their work goes on. Children brought up in godly homes take up the work of their fathers and mothers, "and their works do follow them."

My good friends, have you a Bible of *your own*? Are you reading and listening to its counsels every day? Have you discovered that, although there may be a great deal in it that you do not as yet understand,

that it shows forth on every page that it is the word of God and not of man? that it holds up the highest type of character of any book in the world. It enjoins righteousness, temperance, and purity, and protests vehemently against selfishness and every thing that is low and ignoble. Are you making that book the book of all books? and is your main delight "in the law of the Lord"?

At Traverse City I was agreeably pleased to find a young friend of mine who had just taken charge of one of the prominent hotels of the town. Owing to the number of travelers who wanted lodging all at once at a late hour, there was difficulty about finding rooms for all. But just as I prepared to retire I had another pleasant surprise in finding a nice substantial Bible with plain clear print on my table. Just inside of the cover was a mention of the Gideon Band of traveling men who had raised the money and taken the trouble to place such a Bible in the sleeping-rooms of every hotel in our land. You may recall the fact that I mentioned a carload that went to Chicago for this purpose. God bless the Gideon Band. If they do not get back the money they have expended in this missionary work they will get back something of more value than money, for they have indeed been "laying up treasures in *heaven*" as well as here on earth.

Notes of Travel

THE OLD "CABIN IN THE WOODS" ONCE MORE.

It is now just about two years since I visited our cabin in the woods on Grand Traverse Bay—the place that figured so largely in our Home papers some ten or twelve years ago. Northern Michigan is a great rendezvous for campers during the hot weather; and when the Ann Arbor railway announced an excursion trip from Toledo to Traverse City and back for only \$5.00, right during the extremely hot weather of the latter part of July, a great lot of people responded. There were something over 500 on the train on the 24th of July.

Our readers may not be aware that the Ann Arbor Railway Co. was progressive enough two years ago to start motor cars twice a day from Toledo, Ohio, to Cadillac, Mich. These motor cars are much like the electric cars, but larger, and they are propelled by a gasoline-engine on each car. They not only have regular stopping-places about a mile apart, but, if I am correct, they stop and take in anybody anywhere who is tired of going on foot. These motor

cars are not only a great convenience to people all along the way, but they enable their steam-drawn cars to run something on the plan of the "limited," stopping only at the larger stations. The motors, you see, pick up passengers and leave them at the regular stopping-places for the steam cars, in the larger towns. Each car contains, besides the engine-room, a smoking-room, and very nice accommodations for 83 people. As they have been in successful operation for two years, they probably will continue.

I was agreeably pleased to see a great improvement in agriculture all along the railway. The sandy soil of Northern Michigan has long been considered a difficult problem, even for the Michigan Experiment Station. On my trip I found greatly improved dwelling-places as well as better crops of corn and potatoes, oats, and sometimes very fair wheat all along the way. When I got above Traverse City, on the shores of Grand Traverse Bay, I found cornfields that not only rivaled our best corn-growing districts in Ohio, but some of

them were even further ahead. It is a little sad, however, to find all over our country that the expert and progressive farmers are in the minority. It is so down in Florida, and it is so all the way from Florida to Ohio, and all through Ohio. Here and there we find men who are able to "do things," and who shoot up ahead of the rest. I have faith to believe, however, that the coming generation are catching on to the state of affairs, and are making better. Surely our agricultural colleges and our experiment stations where boys are taught "sense and science," ought to be producing some satisfactory results by this time.

In times past I have frequently mentioned my friend James Hilbert. Ten years or more ago I began to urge Mr. Hilbert to test alfalfa. In fact, there was a small field of alfalfa between his place and mine; but he had so many different hobbies—strawberries, raspberries, peaches, cherries, etc., that I could not get him interested. On this visit, however, I was most happily surprised to see beautiful green fields of alfalfa growing with surprising vigor—about ten acres in all; and as the fields of it dotted over his farm in different places it was a magnificent sight—at least to me. His first field is now about three years old, and it has given him an enormous amount of feed; and the plants seem to be getting stronger and more vigorous year by year. He succeeded in pulling up a plant, but where it broke off, about three feet down, it was almost the size of one's little finger.

The great secret of alfalfa holding out through protracted drouth is that it sends the vigorous tap-roots far down to permanent moisture. There are some stories to the effect of the roots going down into a well thirty or forty feet. Mr. Hilbert says one great reason why there is not more alfalfa grown in the Grand Traverse region is that the farmers must learn the secret of getting a stand or a "catch," as it is called. The field should be in good fertility, and as free as possible from weeds. In that region seed is usually sown in June or July, and you want the nitrogen bacteria. You may have seen something advertised in the journals called formagen; and they are sending a little bottle of the bacteria-forming material for \$2.00. This is enough for an acre. Now, the Michigan Agricultural College has taken hold of the matter, and issued a pamphlet on alfalfa, agreeing to furnish enough of this material for inoculating soil for 25 cents instead of \$2.00. And that is characteristic, I believe, of the Michigan station. I am in hopes that the experiment stations of other States are doing a like praiseworthy work for the farmers.

Mr. Hilbert bought one lot of alfalfa seed that was, a considerable part of it, sweet-clover seed, and where there was a good stand of alfalfa in full bloom, and forming seed rapidly, there is also a pretty fair stand of sweet clover, about as high as one's head, also in full bloom. Mr. Hilbert says that, although he got something he did not expect and did not order, he is well pleased with the sweet clover. Very likely it will be a great help in getting in the bacteria for the alfalfa, after the sweet clover is gone. He proposes to cut and thrash for seed, both crops at once. While he is not prepared to say that good alfalfa hay entirely cuts out the necessity for grain, he says it comes pretty near it. A progressive neighbor of his, I am told, has *forty acres*, and others are reported as getting the alfalfa fever.

I found a young friend of mine, whose farm joins my own forty acres, sowing alfalfa through his cornfields after the last cultivating. This is something of an experiment, it is true; but it may turn out all right.

They have been having very opportune rains all summer up there, which accounts largely for the general prosperity. The beautiful soil on the sandy hills enables them to grow nicer potatoes up there quicker than we get them here in Ohio, for I found new potatoes at about every place I stopped.

Now for a glimpse of the premises around the cabin in the woods. It had been two years since I set foot on the place, and five or six years since I gave my young fruit-trees any care. What is the result? The peach trees are mostly dead or dying. They would, perhaps, have survived the cold winter of 1911 and '12 had they been properly pruned, mulched, etc. The apple trees, however, are doing fairly well; and a Yellow Transparent tree was so loaded down with fruit that some of the branches were lying in the grass. The apples were just beginning to ripen. It was somewhat a question of what things would survive such neglect. About ten years ago I planted fourteen different kinds of currants—a bush of each kind. Almost every currant-bush lived in spite of grass and weeds, and most of them were bearing fair crops, some of them heavily loaded. A row of asparagus-plants were looking as thrifty, almost, as if they had had cultivation. A widow has the place in charge; but she was so busy with her own farm a good deal of the stuff was never gathered. A grapevine had climbed into a mulberry tree, and some beautiful clusters of grapes were growing side by side with the mulberries. The tame raspberries I

planted had been mostly run out by the native sort. But not so with the blackberries. They had survived, and were bending to the ground with great masses of green fruit.

This is a wonderful region for red raspberries, and I am going to talk a little at length about the red raspberries in Northern Michigan. My good friend J. Palmer, who is also a subscriber to GLEANINGS, has about the prettiest raspberry-farm I ever saw. There are acres of great clumps of Cuthbert raspberries, all just alike; and we arrived there just while a dozen or more boys and girls, men and women, were picking the fruit. When we first drove up I suggested to my friend who was driving that we would find Mr. Palmer sooner if we inquired of "that boy in the cherry tree close by the road;" but when said boy looked up to give us directions, there was a roughish smile on his face; and I could not understand why he should blush until his face took on almost the same color as the cherries until a lady at my side suggested that said *boy* was a *girl* wearing overalls so she could climb around where the cherries were thickest. Now, that is all right, especially if the father or mother were somewhere near by. She was quite young, and any sort of skirts would be more or less a hindrance in climbing among the branches of a cherry tree bending down with ripened fruit. When she comes down out of the tree she no doubt has some sort of skirt to slip on before she goes around among people.

Well, friend Palmer took great pride in showing us over his plantation. He invited us to go out where the berries had not been picked; and, didn't we have a "picnic" that afternoon? Then he showed us a model cherry tree loaded down with the most luscious fruit; and we ate more cherries after we thought we had had plenty of red raspberries. The raspberries on his cultivated ground were beautiful, large, and luscious fruit; and I think he is getting a price that will pay well for all his time and trouble. When I asked him about maintaining such fertility on the ground I used to think was almost "no good," as it is so full of sand and gravel, he pointed to a field of clover, rank, luxuriant, and full of bloom. Turning under clover is the secret. A big swarm of bees that had been hived near the cherry tree also attracted our attention.

While red raspberries are found all over the woods in Northern Michigan, right up around our cabin they were so dead ripe that they rattled down on the forest leaves whenever we touched a bush. Of course, the wild ones are not as good, nor as a rule as large, as the cultivated Cuthberts.

While I am talking about raspberries, let me remark that, as we were approaching the city of Cadillac, I wondered why the train should stop right out in the woods where there was no station. We soon understood it, however, for a dozen or more women and rosy-cheeked girls climbed into the car, each one holding a basket or dishpan heaping full of wild red raspberries. The obliging conductor of the train had carried them out into the wilderness in the morning and stopped to pick them up with their loads of berries about six o'clock in the afternoon. Now just a little more about red raspberries.

Freddie Heimforth, the eighteen-year-old son of the widow who has charge of my place, has three colonies of bees. One of the three has already given *ninety sections* of comb honey, besides sending out a rousing swarm; and as the honey was coming in when I left he will probably get more yet. Well, Freddie picked out a section from the ninety—one that was quite a little travel-stained. The honey was thoroughly ripened. I had finished breakfast, and I thought I did not care for any honey. But he cut out perhaps a quarter of a section. It was so thick it would hardly run, and was a beautiful golden yellow. Now, beside my plate was a bowl full of mush made of cream of wheat. My breakfast was so ample and satisfying that I had not got around to the cream of wheat; but when I tasted that honey, not seeing any bread and butter, I took a spoonful of the mush. Do you remember what Ernest said a while ago about cracked-wheat muffins and nice honey? Well, I just recalled it when I tasted that mush with the honey. A part of a glass of milk that I had left stood near by; and I not only ate all of that honey and drank all of that bowl of milk, but I was so full of enthusiasm for the raspberry honey of Northern Michigan that I felt just like saying it was the very nicest honey I ever tasted. Mrs. Root, however, reminds me that I have said the same thing so many times before that nobody will believe me if I say it again. Did such a big breakfast make me sick? Not a bit.

I kept inquiring all around about that Sunday-school over among the hills that I started thirteen years ago. The people told me it was still going, and that it had been running all these years, winter and summer; but they guessed a good many didn't go of late. So, after my hearty breakfast I started out to invite the people I knew to come to Sunday-school next day. I told them I was going to talk a little while. Well, I told you before about the great hills—the biggest hills, if I am correct, in all

Northern Michigan. In order to get over to that little church down among the hills I was obliged to climb the hills on my own premises. Ten years ago it made me very tired, and I sometimes had to sit down and rest on the top of the big hill. But on this particular Saturday I not only walked up the hill, but I pulled off my cap (my coat was left behind) and *ran* uphill, and I did not mind it a bit. I was so rejoiced that I had *gained* strength and muscle, in spite of the fact that I am just approaching 74, that I shouted praises to God. Nobody was near, for I was off in the wilderness; and I kept climbing up and down hills from one neighbor to another all that Saturday afternoon, and I did not get tired a bit. What is it the good book says that comes in right here?

They that wait upon the Lord shall renew their strength; they shall mount up with wings as eagles; they shall run, and not be weary; and they shall walk, and not faint.

Do you ask me who it is, or what people shall have unusual strength? Let me quote further: "They that wait upon the Lord shall *renew* their strength." And it occurs to me that, if the text did not hit me exactly, it came pretty near it, for I was inviting people right and left to come over to the Sunday-school and the preaching service next day. It was a bright and beautiful Sunday when we gathered around that Bingham church. The first thing that greeted me was a row of sheds for horses and buggies—about the neatest and most comfortable sheds for protecting horses (and perhaps automobiles) from the wintry blasts of Northern Michigan that I ever saw. When I was congratulating the men folks on what they had done to enable people to get out to church on stormy Sundays my good friend Mrs. Wilson, who has been all these years superintendent of the Sunday-school, informed me that the *men* did not build the sheds. I turned to her in astonishment and said, "Why, Mrs. Wilson, if the men folks of this community did not build those comfortable sheds, who did build them?"

"Why," she replied laughingly, "they were built by the ladies' aid society. Of course the men came in and helped after we had started the thing going, as they almost always do."

Her bright animated smile intimated that she had no grievance against the men folks. As the back of the shed was built against the sandy bank it was all cement and cobblestone. After this cement wall was put up, the sand and gravel were banked all around so it would be a very comfortable place on a stormy Sunday, especially when

the sun shone in at the open south side. A flower-bed that I made and planted contained some poppies; but the other plants were mostly gone, from the fact that the good woman who kept it for so many years had been called to her heavenly home. I talked to the Sunday-school about what I have given in *Our Homes* in this issue.

Speaking about cement walls reminds me that my good friend Hilbert has a lot of hot-beds or cold-frames made entirely of cement, of course with glass sashes on top. In these beds he starts cabbage, cantaloupes, tomatoes, and other stuff to get an early market for Traverse City before anybody else. He was just selling Early Jersey Wakefield cabbages at 8 cts. per lb., because he had the first on the market, and because his cabbage was so much superior to that shipped in from Florida. He set out in the field 1400 hills of choice cantaloupe melons, and they were just setting fair-sized melons. His tomato-plants were loaded with green fruit, some of it big enough to be ripe; and an up-to-date motor truck carries his produce about nine miles to the city. Mr. Wilson, the husband of the good woman who is superintendent of the Sunday-school (and who kept it up winter and summer), has a fine farm of 200 acres. He is a crank on growing apples, and expert in grafting. His cornfields are about the cleanest and handsomest I ever saw; and when I looked over the prettiest kitchen garden interspersed with flowers here and there I asked my young companion, Jimmie Draper, eleven years old, "Why, Jimmie, who took such excellent care of this beautiful garden?"

He replied, "Why, Mr. Root, I think it was my mother and grandmother. My pa does the cultivating, but the women-folks do the rest."

I have told you about some of the crops in that beautiful county of Leelanau, Michigan. But there is one crop I did not mention—at least I did not say much about it. Young Mr. Wilson, whose farm adjoins mine, has three beautiful little girls and a boy. Mr. Draper, a son-in-law of Mrs. Wilson, superintendent, has also three beautiful little girls and a boy. The boy took me through the garden.

When I gave them my talk after Sunday-school I asked them if the Endeavor Society was still kept up. There were many affirmative nods from my smiling audience.

"When do they hold meeting?" I asked. Somebody replied, "Right after Sunday-school."

Then I concluded I would have to make my talk short. Well, who do you suppose led the Endeavor meeting? Why, a bright

young woman who had a baby in her arms. When she led the meeting she deposited the baby on the floor back of the pulpit, and there he lay during the meeting as contented and happy as could be. I congratulated her on having succeeded so well in shouldering her double responsibility. Oh, if all the married people in our land would care enough for the church and Sunday-school to go and take the baby along, what a blessed thing it would be! and what a grand start it would give that baby to get familiar with the Sunday-school before he is even a scholar! We had an excellent sermon in the evening with a crowded house. The text was, "Bring up a child in the way he should go, and when he is old he will not depart from it."

OBJECTIONABLE FEATURES IN REGARD TO COMING TO FLORIDA IN THE WINTER, ETC.

Mrs. Root has suggested to me several times when I am writing up all the nice things about southern Florida that, to be fair and honest, I should also tell of the objections. One morning we counted up four things that were more or less objectionable in regard to coming here. First and foremost is the redbug that I have said so much about. Last winter we were troubled almost none at all—at least not until warm weather came in March and April. This winter they seemed to be unusually bad from the time we came here, about the first of November, until almost up to Jan. 1. Since that they seem to have let up considerably for some reason or other. Now, after trying a great variety of remedies, one given me by my good friend neighbor Abbot, I think, is simpler and perhaps more effective than any thing else. It is simply this: Take a daily bath in the morning, and before you put on your clothing rub yourself over pretty well with soapy water and let it dry on instead of wiping it off. You may object to this sort of treatment; but I have used it now for several weeks, and can not discover any ill effects. Of course, the soap is nicely and thoroughly washed off when you take your next bath; and after the bugs seem to let up, or you are not obliged to go out among the grass or bushes or in the woods, you can omit it. By the way, people living in town, who do not go out among the dry grass, and brush against the palmettos or run against rotten logs in the woods, are seldom troubled at all. By staying away from the country, and especially keeping out of the fields and lots where there isn't a trodden path, you will have very little trouble.

The next trouble I am going to mention will make you smile a little. It is mud-wasps. During the past six or seven winters that we have passed in Florida we have not noticed them very much until during this past winter. With the excessive rains of the past summer it seems as if the wasps must have been more plentifully supplied with mud for building their nests than ever before. You may wonder what harm they do by building these mud nests. Let me digress a little to explain. Mrs. Root has all along wanted some kind of blinds or shutters to our windows. The sun here in Florida gets to be pretty hot, even in December, January, and February, and she thought it would be a fine thing to have the windows shaded when we go home in the summer so that the sun may not come through the glass and injure the floors and every thing else that it strikes. Of course, you can put up curtains to the windows; but after having tried curtains, even cheap cloth ones, such as we should like to leave while gone, and having what they call the "silver moths" eat them all to shreds, we abandoned the curtains. These mud-wasps seem to take it for granted that the green blinds put on our windows were just there on purpose for them to build their mud houses all over the inside. In fact, some of our window shutters were so plastered that we could not possibly open and shut them. It was a real task to "chisel" out the mud so as to get them down and clean out the debris. They built their mud houses all over my tool-house, stuck things together, and even made quite a big mud nest on the under side of the cover to my automobile; and at every turn we find all sorts of utensils and every thing else stuck together by wasps. There is, however, a redeeming feature, as there is with almost every nuisance that we meet in this world of ours. The redeeming feature is that the mud-wasps are fierce enemies to common house-flies, and they clean out the flies so effectually that there has been scarcely a fly visible, outdoors or in, so far this winter. Very likely the wasps are bad only during particular seasons or at certain times; and it is true that we have never seen them any thing like as bad as during the past winter, or, rather, the work, perhaps, that was done during the past summer. As I have suggested, perhaps the dampness may have had something to do with it. After hearing the above, Mrs. Root says I have not put it strong enough. The blinds and windows-sashes to some windows were so plastered with mud nests they could not be stirred "a peg" until the nests were "chiseled" out. Then we sandpapered the

woodwork and painted it over. This is probably one reason why so few *slatted* blinds are seen in Florida.

I have just alluded to the silver moths, and they certainly are a pest here, and no mistake. Every thing woolen must be carefully tied up in a paper bag or protected some way, for they would be sure to eat it to shreds. Of course, moth-balls are something of a remedy, but not entirely so. Where we kept quite a quantity of moth-balls, there were very few silver moths.

This leads me to my third objectionable feature here in Florida—the roaches. I believe these are sometimes called cockroaches, but I don't just like that name. The ones we have down here are much larger than those commonly seen in the North—at least they are larger than any I have ever seen there. They are so big that they make a pretty good bite for chickens when thrown to them, as poultry are very fond of them. They are great black bugs, but very *thin*. I suppose they are thin on purpose so they can slide through small cracks between doors, windows, and almost anywhere else. On account of their thinness, and their habit of pushing in to almost every crack or crevice, it seems almost impossible to "fence them out." Of course, there are poisons for them, because they are voracious eaters; but if you poison the cockroaches and throw them to the chickens the poison will kill the chickens also, so there is not very much poisoning done here. Cockroaches are a nuisance, because they are always hungry for any thing in the line of starch or mucilage. They make it their principal business in life to eat up the papers and wrappers, or any thing that is pasted on to a box, bottle, jar, or any thing else. I even had a little bottle with a label "Strychnine" pasted on it, and about the first thing they did was to eat off the label. I suppose they thought if they got the label off they would be immune to the effects of the poison, which proceeding is, after all, about as sensible as some of the remedies that some human beings take for the ills that affect humanity. Now, we have found by experience that there is no use trying to label any thing down here. It seems as though they have a mania to hunt up the most important words in the label and eat that out first. When you come to examine your medicine, eatables, etc., that have been carefully labeled and put away, you will find that the labels are not readable on account of the cockroaches. I am not quite sure, but I think that, when they can not find any thing else to eat, there are certain kinds of paper that have something in their makeup which they manage to subsist

on; for it seems to be a passion with them to riddle every thing in the line of books and papers that they can get at. The redeeming feature of the cockroaches is that they are such excellent food for poultry; and if poultry could be allowed to run around the house they would thin them out to a great extent.

There is only one other drawback that I think of just now, and that is the Florida mosquitoes. I am glad to say, however, that there have been very few of them here this winter. In fact, I have never been troubled any winter with the mosquitoes in our neighborhood. Mrs. Root says, however, that a mosquito will find her if they do not seem to find anybody else; but by keeping our doors and windows carefully screened it is seldom that a mosquito gets inside the house. There is, however, something else along that line that I find exceedingly annoying—the little bits of gnats, almost invisible, or what I suppose are sometimes called sandflies. If you have any especial work that you are very much interested in that is worrying you and making you nervous, it seems as if these gnats take especial pains to get in *their* work at just that time, and make life almost unbearable. For instance, if you are at work at the automobile, and something puzzles you, and you are in a great hurry; also suppose that your hands are so smeared with black grease that you can not touch your face or nose or ears, or any part of your clothing; suppose, also, that you are getting "sweaty under the collar," then just at these times it seems as if they took especial delight in taking advantage of you. Let me say, however, that they are seldom troublesome unless it is about sundown and at the close of day. I have known them also to be very annoying at certain times early in the morning when we have muggy rainy weather. Sometimes, when I find it time to gather my eggs, and am a little late about it, these pests seem almost unbearable; and if it were not for that precious remedy that I have several times mentioned, and which has also been mentioned in our government bulletins, the "oil of citronella," I don't know how I could get along. We have two little bottles of it, one in the cupboard and one out in our tool-house. These ounce bottles, bottle and all, cost only ten cents, so it is not a very expensive matter to have plenty of the oil of citronella close by. I simply take out the cork, press the mouth of the bottle on the palm of my hand, put it back, and put in the cork. Rub the palms of the two hands together, then take a rub around your neck, over your eyes, and on your forehead,

another around your wrists and backs of your hands, and the sandflies will bid you good-by. Sometimes in the evening, when I want to work in the garden I should really have to give it up if were not possible to go to my bottle of citronella. After applying that as directed above, I can go on and work in peace and quietness. Citronella is used, I am told, largely by hunters and fishermen, and it seems to be a perfect remedy for almost all sorts of insect pests. In fact, it keeps off the redbugs I spoke of very well if you rub some of it around your ankles and the tops of your shoes before you go out to work in the fields.

I forgot to say in the proper place that mosquitoes are very annoying to babies unless the house is screened and protected, so that you can keep them out. A great many people come into Florida to spend the winter. To save the expense of renting, they build little cheap houses. In fact, there is no end to the cabins and houses, all the way from almost nothing up to the fine houses that we find here. The people who bring babies into these little houses, where there is no way of fencing off the insect pests, often find themselves in serious trouble, or at least the babies do, and some of the poor little innocents have their little lives almost worried out by these insect pests if some means is not taken to keep them away.

SWEET CLOVER; HOW THE "NOXIOUS WEED" IS COMING TO ITS OWN.

We copy the following from a little poster mailed us by our good friend Frank Coverdale:

SWEET-CLOVER PICNIC.

Have you seen a sweet-clover pasture? Have you seen sweet-clover hay? Have you seen washouts held by sweet-clover roots? Have you seen the effect of ground limestone on sour soil? Are you interested in these things? If you are interested, come to the farm of Frank Coverdale, four miles southwest of Delmar, on Tuesday, July 29, 1913.

Bring your family and a picnic dinner. We will meet at eleven o'clock, have a picnic dinner in the woods, listen to a short program, and then spend the afternoon seeing the one hundred or more acres of sweet clover on this farm, which has become known all over the United States. Sweet clover is being used on this farm as a pasture, and a hay and seed crop. Mr. Coverdale has some small test plots which show very plainly the value of ground limestone in sweetening the soil and making crops grow better. No one has a better opportunity than the Clinton County people to see just what the sweet clover is good for. Don't take anybody's word for it. Come and see.

Bureau of Plant Industry of U. S. Department of Agriculture, Iowa State College of Agriculture, Agricultural Committee of Clinton Commercial Club, cooperating.

Of course the date, July 29, has gone by; but we give the contents of the above poster to let you see how the Department of Agriculture, Washington, as well as the Iowa

State Agricultural College, recognizes the value of sweet clover to the nation at large.

A full report of the proceedings of this sweet-clover picnic will be found in the new edition of our little book, now in press, "The Truth about Sweet Clover."

SWEET CLOVER; CHICKENS CATCHING DRONES, ETC.

Find enclosed a stamp for which please mail me any literature that you have regarding sweet clover. I believe you had a book entitled "The Truth about Sweet Clover." I met a very intelligent farmer here who wishes to find out something regarding it with a view to sowing, but he had been told that he could never get it off his farm if he got it on.

I have read in GLEANINGS several times about chickens eating bees. I have some chickens about a month old that are smarter than any I have read about. A few days ago there was a scarcity of honey; and the bees, being in box hives that I had not yet transferred, had lots of drones, and those chickens would wait until they saw a worker bring out a drone, and then they would grab the drone. They could also tell the drones on the wing. I watched them do this two different times. There appeared to be only two chickens that bothered them, and in no case did I see them touch a worker; but they seemed to be afraid of them.

So far I think the honey-flow very light here; but as to what is to come I know nothing, as this is my first year here.

Vivian, La., June 25.

C. E. HAMMOND.

We are sorry to tell you that our little book on sweet clover is out of print; but we are working on a new edition, and will get it in the hands of our friends as soon as possible.

Tell that "intelligent farmer" that he is certainly behind the times in one respect. It is true that sweet clover was once called by some people a noxious weed, but that time is past. Consult your experiment stations or almost any agricultural paper printed, and they will tell you that sweet clover is now recognized as being next to alfalfa. In fact, it prepares the soil for growing alfalfa better than any thing else in the world. Because domestic animals have to be taught to eat sweet clover at first has given ground to this notion. After they once get a taste for it they prefer it to any other clover; and the best thing about it is that it will grow on ground where no other clover will grow, and, in fact, where *nothing else* will grow; and after having grown it inoculates the soil with nitrogen bacteria so that almost any other crop can be grown profitably. It is now being recognized and grown all over the world.

As long as you can keep the two chickens that take the drones but not the workers they will be a valuable asset, and you had better hold on to them.

18,000 SALOONS OUT OF BUSINESS IN ONE YEAR.

That the dry movement in America is gaining ground is shown in the annual report of the Internal Revenue Department at Washington, for the fiscal year ending June 30. It shows that 18,000 saloons suspended business during the year.—*Wheeling Advance*.